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A REVIEW OF THE WORKS

OF

EDWIN CHADWICK.

WITH A BIOGRAPHICAL DISSERTATION.

BY

BENJAMIN WARD RICHARDSON

IN TWO VOLUMES.

VOL. I.

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To

MRS. EDWIN CHADWICK.

DEAR MRS. CHADWICK,

When in the olden times our forefathers desired to perpetuate the memory of a man who had rendered great services to his country and age, they were wont to include in the record of his name and eminent deeds, the name also of her, his chosen companion, whose talents, virtues, and affections were the truest treasures of his life.

Permit me, then, in like manner, to unite, in this dedication, your name with these memoirs of the learning, industry and beneficent genius of your distinguished husband.

Faithfully yours,

B. W. RICHARDSON.

PREFACE.

IN the early part of the year 1883 Mr. Edwin Chadwick, the author of the works herewith submitted to the public, did me the honour to entrust the labour of preparation to my care, with the understanding that the selection and arrangement, in two volumes, should rest entirely on my responsibility.

I accepted the task with the expectation that the work might be completed in from twelve to fifteen months; but long before that time had arrived, the abundance of material which was placed at my disposal, accruing from the labours of one of the busiest lives during sixty active years, was sufficient to call for fully three times the period originally contemplated.

The work thus protracted beyond what was expected at the outset, has, however, afforded compensation in the assurance felt, stage by stage, that it will not be lost, and that the historian of a later day, who shall write the history of the England of the nineteenth century will be glad that there was so much material to be con-

densed from the writings of an author who, born with the century and living through it to its near end, was one of the most industrious and observing students of the "very age and body of the time, his form and pressure."

In the course of the volumes the methods of arrangement are so fully described, I need add nothing here on that score; but I must say a word respecting the title given to the work. For that title I am solely responsible. I was at first inclined to select a title connecting the subjects discussed strictly with English life and character. Gradually, however, it dawned upon me that nothing was advanced that did not bear, or that might not be brought to bear, on the well-being and happiness of peoples, everywhere. And so, under a bolder name, I venture to launch, with the hope that it may obtain both the present and future breezes of public favour, my friend's book as the "Health of Nations."

B. W. R.

25, Manchester Square, London,
March 31*st*, 1887.

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EDWIN CHADWICK. C.B.

A BIOGRAPHICAL DISSERTATION.

CHAPTER I.

TO relate in a plain and simple form the more important details of the life of Mr. Edwin Chadwick, the author of the works included in these two volumes, is the object of the present dissertation. He whose career is to be recorded wishes for nothing so much as that the record should be brief, clear, and homely. He has placed before me the facts which he recalls from his earliest days, leaving me free to select from them. I shall treat these facts honestly according to his desire and their own excellent deserts, so that those who may, in the future, desire to comment on him, and the numerous works which he has added to the nineteenth century, may be sure that in these few pages they are in the possession of the truth from its original sources. To the facts, directly derived, I shall add some few impressions, derived from my own personal and, for a long time, intimate knowledge of my friend during an unbroken and increasing friendship, which, commencing in the early days of the Epidemiological Society, about the year 1853—4, has continued until this hour,—a period of over thirty-three years.

In the first days of our friendship sanitarians were struggling to make their labours known, and as the great

work on the "Sanitary Condition of the Labouring Classes," written by my friend not many years before, was the standard work in sanitary science, we younger men looked towards him with much admiration, to which, moreover, was added considerable respect; for he was an authority who was determined to hold his own, and one whose criticism, though little inclined to be technical, was keenly pointed and correctly levelled.

It was one of the features of his method in those now far off days, that he treated all professions with equal freedom when any subject connected with his own pursuits was under discussion, so that they who listened often wondered, when they were not intimate with him, what his own profession might be. One night in 1862, after coming from a meeting in which he and I had taken part in debate, I wrote for the *Social Science Review*—October 18th, 1862—an essay upon him which, as it was well received at the time, I may present again here as an introduction to him when he was in the zenith of his power, premising that I composed the article with the idea before me that in a distant day some writer on his works might find it useful. I am not sorry to be myself that writer. The essay ran as follows:—

EDWIN CHADWICK AS A SOCIAL REFORMER.

"Whenever the social history of this period shall be written by an impartial observer, freed from the jealousies and parties by which we are surrounded, such observer will find amongst the noted men of the time no one more difficult to appreciate, to define, to paint, than Mr. Edwin Chadwick. However long the time may be, however far back the historian may have to look, he will feel, we doubt not, that in this man some peculiar interest was embodied; that the man did some work or works which exerted a striking influence over his time, and caused great changes in its social system: and yet there will be a haze about him which will be scarcely penetrable. The man did and did not. He made laws? Yes. Was he then a Legislator? No, not even a member out of office in the Lower House. He did something for sanitary improvements? Yes. Was he

then a doctor? No; on the contrary, he had not much faith in doctors, looked on them as necessary evils, and as not very likely to last. He had a hand in teaching, or rather in introducing different systems of education? Yes. Was he then a schoolmaster? No; on the contrary, he was not liked by schoolmasters, and therefore very probably did not like them. Clearly too he was neither a practising lawyer nor a clergyman? No. Then what was he? There is but one thing remaining:—he must have been a great writer? Wrong again. The British Museum Library and others are ransacked, there has been no fire, no destruction of catalogues, and his 'opera omnia' do not altogether suggest so much work for a long lifetime, as some men's do for the space of a few years. The question remains as it opened, and is likely to remain.

"The future biographer has our best sympathies; and if his eye should fall on these pages, he will see that he has been prematurely taken to our heart of hearts and buried there. The worst of it is that we cannot help him over his difficulties, we know something of the man truly, but we fail in power to describe the reason of his power; it is a thing to be accepted like an ultimate fact.

"Let us then not stay to speculate as to the prime cause of the influence which Mr. Chadwick possesses, but let us, if we must have a reason, take the unsatisfactory idea that his success primitively is based on accident. We may then look carefully at the character and tendencies of his labours and acts, and measure his power by them.

"In forming an estimate on this rule of inquiry, we may clear some ground by taking up one or two negative points. First, we know that Mr. Chadwick is not an orator. When he first gets up to speak without book he looks an orator, but a few moments dispel the illusion; he bends forward, he speaks in a low voice, he disputes some points logically, then falls into confusion, then recovers his strain, goes back, and in fact if he speaks long, as he is wont, wearies the listener, and takes sometimes the points out of his own argument. As a writer again he is not great: he is plain and yet difficult:

diffuse here, concentrate there: and although he never writes without communicating some new thought or practical lesson, we doubt whether his writings as literary efforts have ever directly touched the mind of the nation. Further, both in speaking and writing, he is often led by a bias which has been implanted by men much inferior to himself: still his intentions are obviously sound, and his mind, when both sides of a question are fairly laid before him, is as just and as logical as that of any man in the realm.

"On the affirmative side of his character we discover that there is one pre-eminent quality, and perhaps after all, it is the secret of his success; he has the faculty of seeing in any reform that he is contemplating what, under existing conditions, may be at once judiciously and effectually removed, and what may be judiciously and safely left as the basis on which to lay a structure entirely new. His poor-law labours all admit of this reading, and the reading explains much that would otherwise be very obscure. In plain words, he is a radical reformer, minus every apparent trace of the radical tendency. His political art conceals his art, and that which from another would appear downright heresy comes from his hand as harmless as though it meant nothing under the sun. In this he resembles the late Count Cavour, and we believe that had he been placed in a position as great as that eminent statesman, he would have performed his task with equal skill.

"The result is, that statesmen who wish to be guided feel in him a safe counsellor. The problems he proposes may seem difficult, bold, doubtful, but there is that in them, that they come out quietly and stand out well. Or, as we once heard a politician remark, when a great question about drainage was the topic of the day:—'Wait a few months, and depend upon it Chadwick will have the case on his side, he always falls on his feet.'

"As President of the Section of Economics and Statistics at Cambridge, Mr. Chadwick has given us the latest glimpse of his peculiar faculties. His opening address was not merely a wonderful review of the progress of social science, but most

cleverly and pointedly suggestive of a variety of things that had to be undone, and of other things that had to be done He is treating of sanitary economics, and he is speaking at Cambridge; therefore he selects the spot on which he is standing for his argument. The townspeople are told in one emphatic sentence that they waste £20,000 a year without the slightest reason. This is the great negative part of the argument, and this leads to a description of what they are to do to remove the burthen. The affirmative effect produced is determinately, though almost unconsciously rendered, and we have only to wait to see it practically carried out. On another occasion he takes up the question of capital and labour, and, indicating what the labourer is not, shows what he might be if properly 'invested,' and so he goes on through many other social subjects, putting forward the evils of existing conditions, and prompting their removal and their replacement, in a manner so slow and yet so convincing, that there is nothing for it but to accept it all in all as 'dismal science,' but so true that its very gloom invites attention, and its inertia action. In his paper on competitive examinations the same current of reasoning prevails. Each point as to the requirement of a public servant is put forth in the most simple and yet the most telling method. We must prepare a public servant as we would prepare him if we required him for private service. This is the preliminary argument. That supplied, the different qualifications are discussed:—what may be excluded safely, what must be retained.

"He takes up history. A man ought, it is said, to know the history of his own country. Yes, but not in such a way as to make a range of the events and characters of some thousand years of the past, with too much of the bad, the subject of competition, at the expense of proficiency in one or other of the sciences, purer and better. History as a topic is one great field of cram, of reliance on memory, and of development; so history may be omitted. Then there are the literatures of different countries. Ought not a gentleman to be versed in polite literature? Certainly; but it is not needful that it should be the subject of competition, at the expense of pro-

ficiency in other and indisputably better and more needed subject matters of training. Literature is another great field of cram and dodging examinations, giving opportunities of trick, yielding chances to the idle who have read for amusement, over the diligent who have laboured for the serious business of life. The literatures may be left for cultivation to social influences, and to their own attractions and advantages as recreations. As tests, they are of an inferior order. These two heads being dismissed as subjects of competition, there remain those which are admitted as means of mental training and superior tests of aptitudes. First in appointed order are the mathematics. It is submitted, taking them as a main test, that whilst the basis of examination is made narrowest, it should be made deeper or rather longer, and that double the time should be given to it. This would have the advantage of giving the slow but sure a fairer chance against the quick and the superficial, and would render the examinations less painful to the nervous. Next, the experimental sciences are considered. There is an opinion, increasing in strength, that greater prominence should be given to the experimental sciences, and that, indeed, for the scientific corps of the army they should be made the chief topic for competition, and of course for preparatory education. The grounds of this opinion are, that mental exercises in the supplemental sciences include exercises of the faculties in induction as well as in deduction; that eminence in the pure mathematics has not been in this country nor in France accompanied by equal eminence in the public service; that the experimental scientist is not practical; and, that if it were put to a chief of engineers, or to a mechanical or eminent civil engineer in this country, which of two competitors he would choose as an assistant, the one who was eminent in mathematics, or the one who was eminent in the experimental sciences, the latter would, from experience, be the one chosen. In support of this argument, he advances a strong preference for the experimental sciences, from what he knows of the failures of the French engineers, who are pre-eminent in pure mathematics, and from what he knows of the failures of pure mathematics at home.

"And thus throughout his address, he carries out the same discriminating policy. His object is to abolish all the artificial or as he calls it 'cram,' and, without insulting any man's prejudices, to institute in place of the artificial the actual: to make the State study how to collect servants who use their hands as well as their heads, and who know only how to use their heads in directing their hands. We have, we believe, but to wait and watch, and we shall see all these reforms effected.

"It is urged by those who oppose Mr. Chadwick that, making the best of him, he does no more than think the same thoughts that other men think, and that in fact he is not 'an original man.' Admitted. But then he has the faculty of putting things forward in an original way, which after all is the soul of originality.

"And in this faculty, we assume, lies at least one great element of all his skill and all his success. If we were to ask him, as some one once asked the great Duke: 'By what faculty did you win your victories?' we suspect that he would give the same answer,—'By common-sense.'"

Recalling Mr. Chadwick to memory as he was in 1862, I might add to the view above presented a remark on his great personal strength of body as well as mind, which indeed has been continued until now in a manner quite phenomenal. He was of firm-set massive build, with a countenance open, healthy, and of resolute expression; eyes dark, hair dark brown, nose aquiline, and forehead broad and massive; the head altogether large, and to the phrenologist finely developed and balanced. At this day when he is in his eighty-eighth year these characteristics are still retained, and sight continues so good that small print is easily mastered without artificial aid. The portrait which forms the frontispiece of the present work illustrates better than my pen his resistance to time; but twenty-five years ago, according to the fashion of the day, the beard was absent.

CHAPTER II.

1800—1824.

THE first year of this century was the birth year of my friend. He was born at Longsight, near to Manchester, on the 24th day of January of that year,—1800. His family was descended from Anglo-Saxon people living near to Rochdale, two miles west of which is a hamlet still called Chadwick, in the township of Spotland. The members of the family spread themselves over the county of Lancashire mostly as landowners and as manufacturers.

Mr. Chadwick's paternal grandfather was a native of Longsight, known there for many years as "good old Andrew Chadwick." This ancestor was locally famous in many ways. He founded the first four Sunday-schools in Lancashire, and he was a friend and great admirer of John Wesley. It was in his presence and in the presence of a few more friends that Wesley made the curious statement: "If after I am dead it be discovered that one hundred pounds belongs to my estate, after all my just debts are paid, let any man call me a rogue."

My friend has a vivid recollection of grandfather Andrew, and holds to it with sincerely respectful and affectionate regard. He has described to me how as a child he walked into Manchester with his hand in that of Andrew Chadwick, a tall, venerable, white-headed man, wearing blue stockings and silver-buckled shoes. He recalls also two other incidents connected with this venerable relative, which he does not criticise, although they were against his own interests. As a follower of John Wesley, Andrew Chadwick was so thoroughly imbued with the idea that to save money was to do wrong,

that when it was proposed to him, on good grounds, to contest the claim of succession to Sir Andrew Chadwick, the London millionaire after whom he was named, he refused on principle. Again, and for the same reason, he refused to purchase some lands which once in his possession would have passed to his heirs enhanced tenfold in value in a few years after his death, which event occurred to him in his ninety-sixth year, to the deep regret of all, young and old, who lived in a district as endeared to him as he was endeared to it.

But for this determination to adhere to principle on the part of Andrew Chadwick, his grandson, the subject of the present memoir, instead of living to see himself acknowledged the modern founder of the science of sanitation in this kingdom, might have lived and died an easy-going but somewhat impetuous country squire, the head man of a vestry, a magistrate, or perchance a deputy lieutenant of the county. This was not to be. Edwin Chadwick, *nolens volens*, was left pretty well to himself all his life, inheriting from his grandsire no money in stock, no land, but a large share of that ancestor's resolute will and determination to carry out what he had made up his mind to do,—a far better heritage than either houses or land, when rightly and honestly directed to the service of mankind.

The eldest son of "good old Andrew Chadwick" was Mr. James Chadwick, the father of the author of the present works. He, Mr. James Chadwick, was of turn very different to his sire. He was of artistic nature, with much ability and love for natural history and music. He taught botany and music to the immortal Manchester physicist and discoverer of the atomic theory, John Dalton, and he took an active part in the liberal politics of his time. He was a friend of Cowdrey the liberal journalist, and at the time of the French revolution he visited Paris, and later on, in company with Joel Barlow, and no less a propagandist of liberal views than great Tom Paine himself, stood once in the Champ de Mars to witness Napoleon Bonaparte, as First Consul, holding a military review. Afterwards he entered into business in Manchester; but as he

did not succeed so rapidly as he wished he moved to London and undertook the editorship of the leading liberal paper of the day, *The Statesman*, during the imprisonment of Lovell,—the actual editor, for a political libel. His temporary occupation of the editorial chair of *The Statesman* was of much service to that journal, since he introduced into its columns a moderate and judicious tone which added greatly to its influence.

His first wife, the mother of Edwin Chadwick, dying very early in life, Mr. James Chadwick married a second time, and having soon a large family to provide for, he gave up the *Western Times*, of which he was editor, emigrated to the United States, and settled in New York as a journalist. There a friend of my own, an excellent amateur violinist, knew him as an aged man who continued to cultivate music assiduously as a violoncello player of quite distinguished skill. He lived in New York much esteemed as an English gentleman of the old school, and it was said of him that "he taught how to bear old age gracefully." His death took place rather suddenly in his eighty-fifth year.

The eldest daughter of James Chadwick married a cousin from Manchester, Mr. Robert Boardman, who became one of the ablest and wealthiest lawyers of the United States, and the writer of one of the best and clearest expositions of the juridical case between the Northern and the Southern States. He was a constant and much attached friend and correspondent of Edwin Chadwick.

The mother of Edwin Chadwick died, as we have already seen, early in life, and while he was quite a child; but he remembers that she was, by nature, a sanitarian *pur et simple*. Morning and evening ablution of unquestionable quality, was the rule with her for her children, and in all domestic affairs she played the housewife's part with thrift and gentleness. She was of the family of the Greenlees of Cheshire.

In his first years Edwin Chadwick was sent to a village school in Longsight, but he soon passed to a boarding-school at Stockport kept by Dr. Wordsworth. Here again he did not stay long at school, for at ten years of age his family took up

residence in London, of which mention has been made. His education in London was continued by private tutors, under whom he took lessons in classics and languages more than in the ordinary branches of study. He made progress in French, Italian, and Spanish, and found these educational pursuits of great use to him in after life.

For his profession Mr. Chadwick elected the law, and early in his teens entered into an attorney's office with the intention of enrolling himself as an attorney and taking up practice in that branch of the law. After continuing in the office for a short time and gaining an insight into the profession he had chosen, he resolved to qualify for the bar. He therefore entered as a student at the Inner Temple, and, with the fullest intention of devoting himself wholly to the duties of his profession, worked steadily on, waiting for that success which only comes to those who wait.

CHAPTER III.

1824—1834.

WHILST his studies for the practice of the bar were in progress, and whilst it was necessary that he should live by his own exertions, our student resorted, as so many of his class were wont to do, to the pen as a means of support. In this direction of honest labour he pursued the course that was, at the time, the most open to him. He began to supply leading reports to the daily press, the *Morning Herald*, one of the most influential of the journals of that time, being the organ through which his literary labours saw the light. Soon afterwards, namely, in 1828, he undertook work for quite a different class of literature, by becoming one of the contributors to the *Westminster Review*, and to the famous *London Review*, conducted under the triumvirate direction of Messrs. Whateley, Blanco White, and Nassau Senior.

His first essay was published in the *Westminster Review* of April, 1828, and was on the subject of Life Assurance. The essay will come before us at length, early in the present volume amongst the original papers of its author, but it must be noticed here as marking a particular and critical period of his life.

The Government actuary, Mr. Morgan, had made a statement before a Parliamentary Committee, upon the soundness of the Government annuity tables, to the effect that although the social conditions of the middle classes of England had improved, their expectation of life had not improved, or, more correctly speaking, had not lengthened. Mr. Chadwick's attention was drawn to this statement by his friend Dr. James

Mitchell, of Aberdeen, an eminent actuary, as a question requiring to be more carefully studied before an opinion so sweeping could be accepted. He, therefore, put aside his other pursuits, in order to look into its truthfulness; and, as he found that his previous legal studies were of great use to him in this new task, he got through it with a facility that was beyond his own expectations. He had commenced without any strong opinion one way or the other, but with a conviction, nevertheless, that the surroundings or environments of individuals must have an influence on their health and duration of life. If the surroundings be good, health and long life must surely be good in proportion. This was the conviction, but it must not tell against the facts. The facts were investigated, and after the close of the inquiry a conclusion, which supported the conviction, was fairly drawn, namely, that in spite of Mr. Morgan's argument, the expectancy of life in the classes specified had improved with the improvements in the social and moral conditions in which those classes moved.

The article on Life Assurance came under the observation of most of the leading social reformers and economists of the day in which it appeared, and it had the good fortune of winning the admiration of no less competent authorities than Mr. Grote, Mr. James Mill, and John Stuart Mill.

Mr. Chadwick has told me that in the first part of his work he was merely interested in the results of the calculations as they came out in reply to the questions he had formulated from general observation and induction. But as the labour progressed a new train of reasoning came into his mind, which, in the end, developed into what he called the "sanitary idea," that is to say, the idea that man could, by getting at first principles, and by arriving at causes which affect health, mould life altogether into its natural cast, and beat what had hitherto been accepted as fate, by getting behind fate itself and suppressing the forces which led up to it at their prime source.

The essay on Life Assurance was followed in 1829, by two others, one on "Preventive Police," the other on "Public Charities in France." Both of these appeared in the *London*

Review, and both added very largely to their author's reputation as an observer and administrator. The first, on Preventive Police, caught the attention of Jeremy Bentham, the great jurist and theoretical legislator, then in his eighty-second year. An introduction to Bentham was brought about by Mr. James Mill, father of John Stuart Mill, and was mutually acceptable. Bentham recognised in Edwin Chadwick a new disciple, who might well be trusted to deal with his own cherished idea of fifty years, that the whole worthy work of the legislator is to enable the people to live happily; and Chadwick responded in principle, if not in detail, to a rule of right so congenial to his own sanitary conception.

Pursuing once more his legal studies, Mr. Chadwick was duly called to the bar, and became Barrister-at-Law of the Inner Temple on November 26th, 1830.

The last grand work of Bentham—his Administrative Code being in hand, Mr. Chadwick's assistance was solicited in completing it. For a time Mr. Chadwick resided with Bentham, and was with him at his death in 1832, a year it has been said singularly fatal to great men; but an offer made to him by the philosopher that he should receive an independency if he would become the systematic and permanent expounder of the Benthamite philosophy, was declined with much respect and gratitude. He received, however, a legacy from the master, and was long considered as one of the most distinguished of the school which Bentham had established, and which in France, even more than in England, had made its influence felt through all the leading classes of learned and thoughtful society.

It was still doubtful what course of life he would pursue. The sanitary idea was dominant in his mind. If this idea could be carried out, disease, which was the cause of all death before the appointed time for natural death, would itself die. It was indeed a consummation devoutly to be wished, and worthy of any amount of self-sacrifice and toil. In his enthusiasm he must needs make a personal inspection of one of the fever slums in the East End of London, and coming into too close contact with the virulent and unchecked enemy, himself

fell a ready victim to it, and all but became one of the army of martyrs to sanitation by typhus as the ministering executioner. Happily he was spared and, unmoved by the danger he had passed through, he let his longings for philanthropic pursuits still influence him in the ultimate choice of his career. The decision was finally come to in 1832 by the offer of public service.

WORK ON THE POOR LAW COMMISSION.

In the year named Lord Grey's Government determined to carry out a commission of enquiry into the poor-law system then existent in England ; a system which, following upon the Reformation, had been enforced on the Legislature by the miseries supervening upon the destruction of the great religious houses, and which had taken final form in the Act known as the Act for the Relief of the Poor, passed in the latter part of the reign of Elizabeth,—1601. The commissioners appointed to the task, were the then Bishop of London (Bishop Blomfield), the Bishop of Chester, Mr. W. Sturges Bourne, Mr. Nassau, W. Senior, Mr. Henry Bishop, Mr. W. Coulson, and Mr. Henry Gawler. These were the chief commissioners, but to them were added assistant commissioners who were entrusted to visit different parts of the kingdom and to institute local inquiries. Mr. Senior proposed that Mr. Chadwick should act as one of these assistant commissioners, and after due consideration he accepted the duty. Mr. Chadwick has more than once told me that this acceptance of office was a matter to him of the gravest moment. The common-law bar was a promising field, his friends urged him to keep to his legitimate work at the bar, and he was himself fond of the practice. The friction of debate caused him no wearing anxiety, but was rather a refreshing exercise for his mental and physical powers. He had unusual strength for work, an excellent memory for facts, figures, and details of every kind, and a preference for full hours of mental labour. These he as well as others foresaw were certain elements for success at the bar, and a sure way to solid preferment. On the other side, the

office of an assistant commissioner, while it effectually broke up legal practice for a long time, if not for good, was anything but a certain and anything but an enviable employment. It was useful, and offered scope for the possible accomplishment of great designs, but it carried very little indeed of promise in its train.

The result of the deliberation ended in the acceptance of the new duty, and we shall find throughout these volumes how the accepted task was fulfilled. I may, however, anticipate a little in this place, in order to indicate from personal facts derived from the prime source the nature of the important changes which he introduced into our national history.

In the earliest part of the proposed reforms made by the Poor-Law Commissioners certain plans were laid down which, in the opinion of Mr. Chadwick, were not sufficiently corrective and not sufficiently comprehensive. His first year of office as an assistant commissioner, spent as it was in direct inquiry and direct observation of the then existing system, had revealed to him an immense array of facts which were of the most instructive nature. These facts assumed in the minds of the chief commissioners so important a character that they determined to request him to be added to their number, a request which led to his appointment as a chief commissioner in the year 1833. This enlarged authority gave to him more freedom of action and of opinion, since it enabled him to advise and direct as well as investigate. But he continued still to investigate, and by that means became, in a truly direct sense, the chief of the chiefs of the board. He was the one who had seen as well as heard, a great difference. Upon this dual knowledge, therefore, he prompted new lines of thought and proposed new lines of legislation, all of which were, it is true, not carried out, but every one of which suggested something that was not previously contemplated, and brought into existence something which in all probability would not other wise have been discussed.

Under the old poor law there were sixteen thousand five hundred local administrations in the form of separate parishes. The old Act was so explicit on separation that it directed

that if one parish should "extend itself into more counties than one, or part lie within the liberties of any city or town corporate and part without, that, then as well the justice of the peace of every county as also the head officers of such city or town corporate shall deal or intermeddle only in so much of the said parish as lieth within their liberty and not any further." Thus everything relating to the poor and to the administration of the poor law was local; the poor were dealt with in such minor divisions that they were, so to speak, ruled all over. They were in the strictest sense of the word the divided and the conquered. The principle here named was an evolution from old and conquering methods of government, applicable in the days when it was established, and essentially in accord with Tudor sovereignty. There was about it a rude practicability which was at once legislative, resolute, and beneficent. The poor and powerless and the rich and powerful must exist in every place, and it was no more a misfortune for a man to be born practically a slave than for a dog to be born a dog. The rich were born rich and powerful that they might hold and rule, and in holding and ruling carry out the bounden duty of looking after the helpless poor. But who could perform such a duty except they who living in the same spot as the poor and knowing every detail could adminster to every want.

There are a few who to this day cling to this system as sound and safe, safe especially as a direct check to all revolutionary projects, and at the time when the commission on which Mr. Chadwick served was sitting there were a great many who held this opinion. All the plans proposed by the other members of the commission were for perpetuating certain parts of the then existing system; and were for sustaining in their authority, with some modifications, the sixteen thousand five hundred local administrations of government. To this method Mr. Chadwick objected; he opposed resolutely every device that was submitted as founded upon the then existing plan, on the ground that larger administrative areas must be formed in order to obtain the executive service of duly qualified and responsible paid officers acting under the orders

and the supervision of a central board elected by the representatives of the people. Such duties as were to remain honorary should, he held, be those alone that were supervisory, like the duties of the visiting justices of prisons.

The plan which Mr. Chadwick himself set forth was in outline the same that was, in the end, adopted; and, on his becoming finally attached to the commission, he was charged with the exposition of the remedial measures advised in the report, and with the preparation of an abstract for a cabinet paper to which reference will be made in the future pages of this work. Later on he was made secretary of the first Poor-Law Board appointed under the Act, for the reason that he would have more executive power as a secretary than as an individual member or commissioner of the board.

There were many deviations from the original Act proposed by its founder. It was a part of his design to separate the actually destitute poor into distinct classes according to their necessities. The destitute children he would have put into healthful and well-ordered industrial schools, where they would have been well fed, well clothed, well educated in physical and mental labour, and each one taught a good and useful trade. The aged destitute he would have housed in almshouses, where they could have passed the end of their days in comfort. The blind, the deaf, and the idiotic he would have placed in proper asylums where they too would have been taught, to the best of their ability, to learn some useful occupation. He would have sought out the insane from the many dens in which they were at that time confined, and would have put them into thoroughly well-managed asylums under the most competent care that humanity and science might dictate. The sick he would have had tended in large and finely adapted hospitals. Lastly, he would have reduced each workhouse to the smallest possible proportions, and would have left it for the use of those able-bodied poor who either wanted temporary work, or who would not work unless they were starved into working; a place for the support of those who would do well and a terror to those who would do ill.

SUGGESTION FOR HALF-TIME EDUCATION.

Coincident with the preparation of the Poor-Law report a new duty imposed upon Mr. Chadwick led to the introduction of one of the most important of the great reforms that have taken place in the educational system of this country. By the introduction of Sir Robert Peel's Bill to protect the young pauper apprentices employed in factories, the ear of Parliament had been reached on the subject of the over-work of children generally in those institutions. Lord Ashley, afterwards Earl Shaftesbury, the prince of good works of the nineteenth century, whose humanity was only equalled by his industry and power of exposition, had laboured for the introduction of a Ten Hours Bill, backed by Mr. Sadleir and by a few other earnest philanthropists. The Government, alarmed at the Ten Hours Bill, insisted on an inquiry, and thereupon appointed, in 1833, a royal commission, composed of Mr. Tooke, Mr. Chadwick, and Dr. Southwood Smith, as Chief Commissioners. Formed on the same plan as the Poor-Law Commission, the Central Board of the Factory Commission was supplemented by an itinerant class of commissioners, who went from one locality to another, inquiring into all the facts and reporting upon them. As a member of the central board of this commission Mr. Chadwick had the executive work of preparing instructions for all the local inquirers; he drafted nearly the whole of the report, founded on the general collections and experiences, and carried out the business with such rapidity, that it was begun and ended within a period of six weeks. The commissioners agreed that any self-acting law to be executed under a local magistracy would be illusory; they recommended the appointment of government inspectors under a central authority, and urged that children under thirteen years should not have more than six hours' work daily.

The institution of an authority of inspection under governmental direction, which took its rise from this effort, was so practical and beneficial in its action, that it has been followed by the appointment of inspectors of prisons and of

mines under the Home Department, by an extension of governmental inspections of workshops, and by various other occasional inspections of a sanitary kind from the Local Government Board. In short, the principle here brought forth, as a preventative economy, received universal approval and is, day by day, undergoing new and useful development, although legislation bearing upon the report of the Commissioners was not immediately carried out, owing to the fact that many other political questions, which were considered of superior moment, stood in its way. Eventually, however, the report led to the Ten Hours Act.

Meanwhile, there resulted from the inquiry one practical proposition, which had as powerful, if not a more powerful, influence than the Ten Hours Bill itself. This related to a subject standing apart from employment in factories,—namely, the training and education of the destitute children of communities.

In drawing up the report of the factory commission, Mr. Chadwick was struck by the facts related on the subject of the work which the children were, in many cases, forced to carry on from day to day and from year to year, without any advantages of a mental kind to compensate for or to relieve their physical burdens. The question was, how to bring them into better health, heart, happiness, and heritage.

This question Mr. Chadwick and his coadjutors tried to solve by proposing that the hours of children's labour should be reduced from ten hours to six, the limitation of a ten hours bill being insufficient as they believed for children. But our commissioner went further than this. He inserted a clause containing a provision that, as a condition of the employment of a child in a factory, it should present, weekly, a ticket from a qualified school-teacher that it had attended his school for three hours daily during the week preceding. He had, at great pains, ascertained that three hours of good teaching would fulfil the receptivity of children, and this provision at once secured the protection of the children from the exclusion, then general throughout the country, of the benefits of education, and against overwork.

Wise and foreseeing as these proposed regulations were they were not altogether palatable to the parliamentary mind. They passed the Lower House, but were very much lamed in the House of Lords, on the ground that they would lead, insidiously, into a system of universal national education. He, therefore, got them introduced, by poor-law administration, into the district schools for destitute orphan children, where they soon worked so satisfactorily as to overcome all serious objections and almost all cavil. So soon as the new system was introduced into a school, benefits followed. More than sixty per cent. of children who were formerly calculated upon as the proportion going "to the bad," to form the seed plots of juvenile delinquency and crime, were saved. Very soon it was found that sixty per cent. of these destitute orphan children went to the good, and gave their benefactor his best reward, in the proofs of their improved health, greater skill in work, and greater competency to earn their bread.

The name given by its author to this system was the "*half-time system of education.*" What it has effected and what its wants are we shall find in the proper place in the present volume; but I may state here that it is the basis now successfully adopted in the industrial and reformatory schools of this kingdom, and is applied at the present time to over forty thousand scholars of both sexes.

Into the report of the commissioners on the factory system, many other suggestive reforms springing from the same source were introduced. Prominent amongst these was one which insisted that when, in the carrying out of public works, accidents happened to the operatives from faulty construction or from machinery, the responsibility should rest on those to whom it actually belonged, namely, the owners of the works or those who were primarily the responsible persons.

The Factory Act as it issued a few years later from the parliamentary crucible had lost much of the spirit, foresight, and beneficence with which it was charged before it entered the crucible. Yet it left behind it no dross, and although it came out of far less value than it went in, it has done a great

deal of lasting good in the factories themselves; while by and from the discussions upon it, it has indirectly led to reforms of great importance. In the development of the half-time system it has given birth to one reform which has no rival in education since schools were established for the sons and daughters of labour.

The six weeks' interruption, caused by the Factory Report, over, Mr. Chadwick returned to his duties on the Poor Law Commission. He had by this time been raised to the position of one of the Chief Commissioners, and played a leading part in the preparation of their report to Parliament. His name consequently appears on the Report from His Majesty's Commissioners for inquiring into the administration and practical operation of the Poor Laws, as the last-named on the Commission. The Report was presented on February 20th, 1834, and the Act springing from it became law in the following August.

CHAPTER IV.

1834—1839.

IN the year 1834 Mr. Chadwick was installed in his office of Secretary to the first New Poor-Law Board, to which post he was appointed as a paid officer on the grounds that as secretary he would have more executive power for carrying out the details of the measure, than if he were merely one of the commissioners.

In this commanding position he had to deal with the measure, to the production of which he had so largely contributed, and which had, with some changes, become law, in a manner that should give to the new law the best and fairest trial. It was soon seen that the deviations from the original plan were not satisfactory, and petitions were presented from a general meeting of county guardians and from the Chambers of Agriculture, praying for the restoration of the complete measure as proposed in the original report of 1833. These failing to obtain a revision, the omissions began to be met by various supplementary efforts for carrying out the rejected parts of the design, in the form of industrial schools, county asylums for the insane, and the many splendid voluntary asylums for the blind, the deaf, and the mentally imbecile.

Against the measure which he had to administer much has been said over and over again. It was soon stigmatised as cruel, as oppressive, and as a tax not only on the tax-payer but on the poor for whom the taxes are paid. One provision of the Act was specially unpopular, that namely which forbade that husband and wife should live together while they were in the workhouse. So strong was the objection to this

particular clause, that Mr. Chadwick was subjected to many annoyances, and even was threatened with personal violence, because of it. He himself, however, had no more to do with the introduction of this rule than any other member of the commission. It sprang up as a protest against the rule which had previously existed, and which had filled the parish workhouses with pauperised children. It was also misunderstood as being applicable to inmates of all ages; whereas such married couples as from age were not likely to have a family were exempt from the rule, and are so now if they like to claim exemption. Strangely enough, numbers who might claim such exemption have refused altogether to avail themselves of the privilege; so that the hardship after all was rather sentimental than real.

While many objected to the new law as a specimen of tyranny, others, and amongst these some best able to come to a sound conclusion, were strongly in favour of it. With all its shortcomings it has been stated in its support that by it the character, quality, and value of the wage-earning classes have been improved; that wages have been augmented by one-third; that the value of land for a time increased proportionately; and that a reduction of upwards of a hundred millions' worth of local rates has been saved by its operation.

In commendation of the measure the late Earl Russell, so long and familiarly known as "Lord John," always spoke warmly. In his conviction "that measure saved the country from great social evils, if not absolutely from social revolution;" while, referring to the first secretary of the Poor-Law Commission, he said, that "in labouring for the improvement of the administration of the funds for the relief of the destitute and the prevention of pauperism, for the improvement of the public health and the physical condition of the population, and for the prevention of excessive sickness and mortality, there was no one to whose zeal and assiduity the country is more indebted than to Mr. Chadwick." In his view also the germ of the great amendment of law was to be found in his, Mr. Chadwick's, report.

To this opinion of a great statesman the late Duke of

Wellington added his testimony, by stating "that the measure was the only plan he had ever seen that he approved of, and that he gave it his cordial support." In like manner Mr. Gladstone has spoken of the Poor Law Amendment Act as perhaps "the greatest reform of this century."

I have put briefly both sides of the controversy on the work of my friend, with the sure confidence that he, in all he undertook in regard to it, will be acknowledged in the future as one gifted not only with administrative powers of the highest order, amounting in their way to genius, but as being actuated from beginning to end by the purest and most patriotic motives and intentions. This reliance of future recognition has ever been a source of satisfaction to himself. One day one of our mutual friends and Society of Arts colleague, the late Sir Henry Cole, brought him the following passage from Burke, remarking that he, Chadwick, ought to have it pinned on his sleeve "as an epigraph." "Those who carry on great public schemes must be proof against the most fatiguing delays, the most mortifying disappointments, the most shocking insults, and, what is worst of all, the presumptuous judgments of the ignorant upon their designs." To which kindly compliment my friend replied that he was "proof," and need not adopt the proposed "epigraph" because "he had not added force to hostilities by being unprepared for them. If six efforts went askew, he consoled himself for their loss by the gain of the seventh, which went true; and he was further consoled as to the rest, that they would succeed in the hands of other men in after time, since in the measures he had prepared there was omitted nothing that was natural, nothing that had yet been shown to be a deviation from the correct line, nothing that subsequent experience might not restore."

In these years of his life, as secretary of the Poor-Law Commission Mr. Chadwick stood forward as one of the most industrious and distinguished representatives of the official work of his time. In 1834 he was elected a member of the Political Economy Club, of which he is now "the Father," or oldest living member. And to him Mr. William Theobald—one of the drawers of the Poor-Law Amendment Bill for the

commission, and afterwards a distinguished lawyer in India—dedicated the first practical work on the English poor law, as to one "whose superior powers of investigation probed the evil of the past poor-law administration to the core, and developed it in a report worthy to rank with the celebrated article of Turgot on Foundations; and chief author of that poor-law reform which by its extent has created a demand for some such work as the following."

SECRETARIAL EMBARRASSMENTS.

The position of Secretary of the Poor Law Board, with a place on the same Board, also as a Commissioner, was not altogether an enviable position. With Mr. George Nicholls, one of his colleagues, the Secretary was usually in concert, and between the two men there remained a nearly unbroken sympathy, with unity of action and intention. With the other Commissioners, Mr. John G. Shaw-Lefevre and Sir Thomas Frankland Lewis, the feeling was not so close. They, held back by likings and tendencies for what had gone before and influenced very much by the views of others who were still more decided in their convictions, had little sympathy with the promotion of original and untried plans of improvement.

In the eyes of my friend, and of those who went with him, they and their supporters were inclined to retrograde, and to submit passively to some of the worst faults of the old *régime*. These faults were slow to die out; they had been the implants of centuries, and to men born and bred in country life were so familiar that the value of a new principle was not recognisable. From these the idea of supplying labour from the workhouse to persons who had lands or buildings outside the workhouse could never be fully eradicated.

A little later on a serious change back to the old system was suggested; namely, that of allowing able-bodied paupers with families to receive out-door relief, and thus live partly on the parish rates and partly on their own earnings,—a direct return to out-door relief, pure and simple, with permission to all who

wanted it to live, in a beggarly way, as if they were independent—a project dead against the principles of the Act, and to be resisted to the death.

In the midst of these difficulties the face of affairs was acutely altered by the resignation of two of the members of the Board,—Mr. Lefevre and Sir T. Frankland Lewis,—and by the appointment, in their place, of Mr. George Cornewall Lewis and Sir Francis Head. These new Commissioners were from the first inimical to the hitherto all-powerful Secretary, and under this opposition he, practically, ceased, almost entirely, to exercise any directing power. He remained on the Board no longer as one of the Commissioners; he acted, actually, as the Recorder or Secretary of the proceedings of the Board, without the personal responsibility of the direction.

The position was strained to the last degree, and remained so until it broke at last under the pressure of an official inquiry on a subject connected with the Andover Union, in the year 1846, about which inquiry I shall speak when I come to that period of this biography.

To a secretary of subtle and supple mind the tone of the newly-constructed Board would have been simply corrective of all authority and power. A subtle and supple man would have given in; and if to subtlety and suppleness avarice or vulgar ambition had been an object, he would have sold his obedience at the cost of his pleasure; he would have fallen in order that he might, according to his estimate, rise. To a man of the obstinate and self-willed type, the effect of the new position would have led to the posing of a martyr. Such a man would have left the Board with a grievance, and, exposing the faults of his enemies to the day of his death, would have been voted a plague of society. A third type of man would have rebelled in so rude and violent a form as to have been turned out of office, with a good deal of "served him right" attached to his departure.

> "Steel through opposing plates the magnet draws,
> And steely atoms culls from dust and straws,"—

and Mr. Chadwick, unlike any of the above types, mindful only of the duties that lay before him and the work he was

born to perform, met the obstacles with a right-about-front readiness, which baulked his opponents as much as it delighted his friends and admirers. Unable to protect the principles he had at heart, in and after the manner of a colleague commissioner, he let his opponents have their way; he performed the secretarial duties, exclusively, with so much scrupulous care and candour that no charge of neglect could be brought against him, while he used the independent position in which he was cast so as to act independently, and to assert on all occasions the law as it stood on the statute-book. When the Board deviated from the law, he told the Board what it had done; when the Board refused to listen to his protests, he forwarded them, in due order, to the Minister; and by these two decisive processes he not only kept the new statute in natural working order, but registered, in unanswerable evidence, that his own proceedings were unconcealed, and that it was open for the superior authorities alone to deprive him of his post. To use his own explanation, he took his real superiors unreservedly and openly into his confidence. In this way, in 1837, Lord John Russell intervened, and sustained the opposition of the Secretary by refusing to sanction some suggested alterations which the Board had made.

This passive system of warfare was hard to carry on for any length of time, and I may, at this moment, when all is past, report that it was extremely painful to the chief actor in it. A strong will contended with a gentle and generous heart, and in the conflict, which he foresaw could not be for ever maintained, he sought for some other outlets of relief, which might be, at one and the same time, grand in design and great in usefulness. "He looked," he has told me, "for every opportunity that should give an historical future to a peculiar and sensitive position." The opportunity came in abundant measure in the two projects next to be noticed.

THE FIRST SANITARY COMMISSION.

In 1838 a severe outbreak of disease occurred in the East End of London, a part of Whitechapel, situated on the borders

of a large and stagnant pond, being the locality most affected. So sudden and severe was the attack, that the parochial authorities were at their wits' end to know what to do or whom to consult. In their distress they thought of the active and resolute Secretary of the Poor Law Board, and to him they applied. The Secretary immediately persuaded his Board to institute a medical Commission of Inquiry; and the choice of the Commission being in his hands, he sent three of the best living men to the scene of the calamity,—namely, Dr. Neil Arnott, Dr. Kay, afterwards Sir Kay-Shuttleworth, and Dr. Southwood Smith. These gentlemen were directed, not only to inquire into the existing epidemic, but to report on the sanitary condition of the Metropolis altogether. Arnott and Kay sent in a conjoint report; Southwood Smith added an independent supplement, in which, with that accuracy of description and command of language which characterised all his writings, he explained for the first time the shameless character of the water-supply, and the extent to which it contributed to disease and death in the capital of the world.

A commission of inquiry of this kind was the passing novelty of the time. It caused quite a sensation, and a sensation so deep as to give origin to a continuous method of research of the same order. The reports became texts in sanitation, and were so much in demand that as many as seven thousand were distributed amongst the people—an unexampled edition of any previous medical or sanitary work outside the ranks of the medical profession. How this great step in sanitation developed a little later on will be seen as we proceed.

REGISTRATION OF CAUSES OF DEATH.

About this date, and for some time before it, Mr. Chadwick had rendered much service in another direction, the results of which have been remarkable in their bearing on the health of nations. In his essay on life insurance and the value of life he had projected the idea of a complete registration of the deaths and causes of deaths of the United Kingdom. It was not possible for him to embody this system of registration in

the scheme of the Poor Law reformation, but he kept it in mind. The opportunity arose in an unexpected form. For some time there had been a movement amongst the Dissenting bodies to enforce on Parliament the duty of making a law that should enable the births, marriages, and deaths of all persons in the United Kingdom to be duly registered by the State, and not exclusively by the Church as established by law. In the brief period during which the Church was practically disestablished,—in the brief period of the Commonwealth,—this introduction of the civil contract was to a certain extent recognised and acted on, as some of our old registers show. The reform had died out with the Restoration, but now a firm resolve was taken by the nation that there should be a complete civil registration, and an Act was brought into the legislative chambers to that effect. Mr. Chadwick, from his position on the Poor Law Board, saw at a glance how important it would be, in carrying out that part of the registration which related to deaths, to introduce, not merely the number of deaths, but the cause or causes of each death. If this could be done all the great epidemics could be tabulated, together with the fatal diseases of constitutional origin; with accidents and violent deaths of every kind; and with reliable records of the numbers, then very small, of natural deaths,—deaths from old age and senile decay. Moreover, by this plan the preponderance of the infantile death-rate would be placed beyond dispute, with the rate of death at every after-stage of life. From the whole would come, in course of years, the materials for forming, not only a death-rate, but a life-rate also,—a basis, in fact, for every available calculation of vital values.

In his anxiety to get a clause into the new Act for certifying causes of mortality, Mr. Chadwick applied to Lord John Russell, who, of the leading politicians of the time, was most impressed with his labours. For some reason, probably from pre-occupation, Lord John could not in this instance be roused to exertion. He could not, to use Mr. Chadwick's words, "be got to take hold of the idea." In this strait Mr. Chadwick wrote to Lord Lyndhurst, who soon became deeply interested in the project, and not only introduced it into the bill in the

Lords, but carried it through the Upper House with so much success that it passed the Lower House with easy transit.

There were, however, introduced into this addition of registration, certain changes from Mr. Chadwick's design which modified the measure in its course through the legislature. He had proposed that the clerks of the Poor Law Unions should be the superintendent registrars of births, deaths, and marriages, and that the medical officers of Unions should be the recorders of the details. Others proposed that these registrars should be special Government officers, appointed by the Crown, under which plan a large number of snug little berths, with fixed and comfortable salaries, would have come into the possession of the ruling powers. In the end both schemes were thrown aside; the first because of the patronage it would have given to the Poor Law Board; the second because of the patronage it would have given to the Government. The registrars, therefore, were left to be elected by the Guardians, from respectable persons engaged without any fixed stipend, as we now have them, while the record of the causes of deaths was left to every qualified medical man who attended at the fatal issues, as still prevails.

One other suggestion made by Mr. Chadwick was also set aside. He proposed to have an annual census, and offered many sound reasons for this course. The annual census was perhaps too short, while the present period of ten years is too long. Five years would have been a much better period.

For the office of Registrar General in the first instance, Mr. Chadwick proposed the well-known physical scholar, Mr. Babbage, the constructor of the calculating machine. The proposition was not favourably received, the office being well adapted to political patronage, to which service it has from the first been faithfully applied. Fortunately, the real duties of the office came into the hands of another officer, also suggested by Mr. Chadwick, who, having truest genius and industry for the post, made it, though second in command, one of the most useful and most brilliant of triumphs that has ever been accomplished in any governmental department. This officer was the distinguished Dr. William Farr, who,

during the long tenure of years in which he held the post, 1838—1880, so completely identified himself with the duties, that in the minds of the people generally he was, *ipso facto*, the Registrar-General. The people knew no other.

It would be quite impossible in anything less than a separate volume to attempt to describe the results that have sprung out of the happy proposition to record, in a trustworthy manner, the causes of the mortality of nations. In a very short time the tables built up by Farr were used for estimating the prevalence of epidemics, the values of lives, the relationships of diseases to seasons, the geographical distribution of disease. So completely applicable to sanitary and economic purposes have these mortality tables become, that, now, towns are calculated up as salubrious or insalubrious by the death-rate returns which they present. Give one of us who has mastered these tables the death-rate of a place and the prevailing causes of death for a sufficient period to prove that the regular death-rate is before us, and we can determine, with fair exactitude, what is the state of the drainage, the water-supply, the general condition of the inhabitants, and the number of public-houses, although we may never have set foot in the place or its neighbourhood, nor have read nor heard of it beyond the tale of the register. The proverb that "pestilence walketh in the dark" is no longer true; pestilence measured and registered, walketh, at last, in the open day.

LESSONS ON INTEMPERANCE AND PREVENTION OF CRIME.

In adhering to the leading lines of this biographical memoir I have omitted some incidental works which ought not to be left out. In 1833-34 a committee of the House of Commons had been sitting for the purpose of collecting evidence on drunkenness. To this committee,—over which Mr. J. Silk Buckingham so ably presided that it became popularly associated with his excellent name,—Mr. Chadwick was summoned, and the evidence he supplied was so advanced and common-sense that I have reproduced it at length in a special chapter in the body of the present work. In his evidence he showed

that the national expenditure from drink was fivefold that of the poor-rates, and contended that if healthy recreations were found for the masses of the people, if coffee taverns were made to replace gin palaces, if cottage gardens were supplied at a cheap rate to the labouring poor of country places, if model cottages were built for the homes of the poor, if public houses were prohibited as houses for the transaction of business, and if a gradual restriction were put upon the traffic in spirituous liquors,—if these improvements were carried out intemperance would soon be a thing of the past. Fifty-three years have run their course, and still these wise reforms remain to be carried out. In fact, the very things which we, with all our wider experience, are still asking for by endless letters and speeches, were all included in this one branch of evidence before Mr. Buckingham's committee.

In other directions our author was also occupied. These may not be so interesting to modern readers as some other portions of his work, because they were made up of details which are now out of the public mind; still, they deserve to be recorded if no more. They referred to two points, having relation to the prevention of poverty by the removal of its causes. On the first of these he made a resolute resistance to the law of settlements, which provided that a labourer or other person could not obtain parochial relief unless he had settled down or found settlement by residence for a certain time in a parish bound. The effect of this law was that in many places tenements for the poor were razed to the ground, in order that the qualifying residency should be rendered impossible. The poor were driven, as a result, into the larger centres, and were often obliged to live such a number of miles away from their place of labour that the journey each morning and night was equal to the work of the day. Against this bad and foolish system the most earnest protests were made by Mr. Chadwick, who, antedating the Corn Laws, expressed his conviction that the cultivation of idle land would more than provide for new comers. The moral of this teaching had at least one good effect. It influenced many farmers and owners to become more liberal in

respect to tenements of the poor, irrespective of settlements; and it encouraged, in so far as recommendation short of legal reformation could encourage it, the erection of model cottages in agricultural districts. The law of settlement, although it is no longer maintained for parishes, exists still between Union and Union, as a social crux which may yet be a source of agitation and difficulty.

The second point raised by Mr. Chadwick had a bearing upon the treatment of two classes of men, who were, so to speak, thrown upon the country. The men first specially referred to were navvies,—men who at one time were employed by the hundred thousand or more in making the railroads which now intersect our island. The others were the discharged sailors or soldiers, who, pensioned off after their periods of service, were scattered through the land, often in a lost and dissolute condition.

For the amelioration of the fate of the first-named of these classes he proposed several of the most thoughtful remedies. He protested against the bad system of paying the navvies the heavy wages they were earning, at long intervals of time, since such payment put them suddenly into possession of large sums which they had no ready means of investing, and which, therefore, were spent in drink and debauchery. He insisted that payment should be made, instead, at intervals not lasting over a week at most, that the contractors should have no hold over the men, and that proper dwellings should be erected for the habitation of all who were employed. Extending these provisions to every class of labourers, he further insisted that the most responsible persons should alone be made responsible for blameless accidents occurring from machinery and erections of buildings.

Respecting men who had been discharged from the naval and military services, he showed that in their case also much of the intemperance and squalor which were exhibited amongst them was due to the fact that they were paid their pensions at long intervals, often quarterly, by which they came suddenly into possession of considerable sums which they did not know how to lay by, and which they, therefore, spent on drink and

other unthrifty proceedings. Finally, as bearing upon the lives of soldiers and sailors, he insisted on the importance of teaching these men a trade or active occupation whilst they were engaged in the services, so that when they were pensioned off they should be able to turn their hands to some useful and profitable industrial pursuit. Towards this last-named reform he has steadily carried on the social war by persuasion and argument up to the present time, in the face of all obstacles and of the important changes which have taken place as to periods of service.

WORK AS A CONSTABULARY COMMISSIONER.

In 1838—39 another and special duty fell upon the shoulders of the Secretary of the Poor Law Board, which, although lying apart from his ordinary official duties, was indirectly connected with those duties, and was the fruit of some of the labours which had led to it. In the early part of his career, Mr. Chadwick wrote, as we have already seen, an elaborate and exhaustive review on the system of a preventive police, a full account of which will be found in the second volume of these memoirs. The facts adduced in the paper in question were supplemented by others which he obtained in his inquiries on the Poor Law Commission, and they led him to solicit that another and distinct commission of inquiry should be made into the state of the constabulary force outside that metropolitan force which had been instituted by Sir Robert Peel's Act, and which was doing, already, the most useful service in the great centre of the kingdom. The commission was granted for this purpose in the last year of the reign of King William IV., 1837; but, owing to the death of the King and other causes, it was suspended before it actually went to work, and was, in the end, dissolved, in order to be formally reconstituted, by command of the Queen, in the first year of her reign. On the 26th day of October in that year, 1838, the new commission was issued, appointing Charles Shaw-Lefevre, Esquire, Charles Rowan, Esquire, and Edwin Chadwick, Esquire, "to inquire, into the best means

of establishing an efficient constabulary force in the counties of England and Wales, with a view to the prevention of offences; with regard to any proceedings before trial, by which the detection and apprehension of criminals may be rendered more certain; for inquiring as to any public service which may be obtained from such a force, either in the preservation of the peace and the due protection of property, or by enforcing a more regular observance of the laws of the realm; and also for inquiring as to the manner in which such a force should be appointed and paid."

The organisation of the commission was quickly studied and laid out, and on March 27th, 1839, the report was drawn up, printed, and submitted. In this work Sir Charles Lefevre ceased to take part before it was completed, so that all the latter part of the undertaking fell upon Sir Charles Rowan—who, by the way, was the then Chief Commissioner of the Police of the metropolis—and our author. The principles of the preventive action of such a police force as was proposed, a force that should be popularly preventive of calamities as well as of crime, formed the topic of a second report; and although only a partial application of the recommendations of the Commissioners was obtained for forces in the counties independently of the chief boroughs, yet it has been shown that the cost of the new force, with all additional civil services, does not exceed the expenses of the old unpaid and inefficient parish constables. In commenting on this part of the labour of Mr. Chadwick, Professor Masson has spoken with the warmest approbation. Throughout the whole he tells us, with keen discrimination, that the principle advocated everywhere was the principle expounded in the original paper on preventive police, "*Get at the removable antecedents of crime*," and then, but not till then, will crime be vanquished. Professor Masson further remarks, and I agree entirely with him, that some parts of this official report on police are as interesting as a novel of Dickens. There are parts, and parts, which do, indeed, hold the mirror up to nature with a perspicuity which the richest imagination has not surpassed.

MARRIAGE.

Connected with the year 1839, an event of personal and happy kind occurred to Mr. Chadwick in his marriage with Miss Rachel Dawson Kennedy, fifth daughter of John Kennedy, Esq., of Ardwicke Hall, Manchester, and of Knocknalling, Galloway.

In setting down to work in London at first, Mr. Chadwick lived in Lyon's Inn, Wick Street, occupying the rooms which once had been occupied by Chief Justice Coke,—"Coke Littelton" Coke. This was up to 1833. He then went to stay with Jeremy Bentham, at Queen's Gate, Westminster, where he remained one year, until Bentham's death. After that he resided at Orme Square; and, in 1839, he settled down at Stanhope Street, Hyde Park Gardens, a married man.

CHAPTER V.

1839—1844.

WE may now revert to those sanitary labours which Mr. Chadwick instituted in regard to the condition of London, its diseases, and its water supply. These labours strengthened the idea which had originally taken root in his mind, from the communications he had held with the well-known Scottish actuary, Dr. James Mitchell, of Aberdeen. The facts will come out at greater length in the latter part of the second volume; but I may say here, in brief, that the secret of the sanitary idea and the essence of it lay in the conception that the life of man is so entirely influenced and affected by its surroundings, that by a perfected sanitary code the death-rates may be made, practically, whatever we like to make them until we arrive at that natural duration of human existence which is bounded by anatomical or physiological law.

The idea thus developed was put to the test by an examination into the number of deaths in different towns and in different parts of the same town. Leicester was compared with London; and Leicester and London were each compared with themselves, their poor and crowded parts being placed side by side with their rich and uncrowded parts. The facts that were collected completely sustained the theory.

The inquiry was next pursued by the historical method. The death-rate of London in the reign of Elizabeth was compared with the death-rate of the later years of William IV. and the first of Victoria. It was found that in the reign of Elizabeth the death-rate was forty in the thousand; that

sweeping pestilences were of common occurrence, and, that the life of the city was maintained by immigration—conditions which had ceased to exist. The idea was further supported by facts collected on the subject of the disappearance of some diseases altogether by the removal of the grand causes producing them. The disappearance of the ague of marshy districts, after the marshes were well drained, was a case in point.

THE SANITATION OF ENGLAND.

The outbreak of the epidemic in the East End of London, and the report made upon it, brought these evidences into stronger relief. The plan of observation expanded, and soon presented itself as one which deserved to be extended from the metropolis to the country at large. Fortunately, for the sake of the wider scheme, the London inquiry had aroused the attention of many active political, and public men, who might not have been influenced by anything less immediately practical. Lord John Russell, a little nettled that he had not seen the great importance of registering the causes of death, was now anxious to help on the new and greater inquiry. Some influential representatives of the medical fraternity, including Dr. Neil Arnott and Professor Alison, of Edinburgh, were earnest in commendation of the scheme; and a few of the Members of the Lower House of Parliament were in its favour.

But the man, who of all others at this particular juncture appeared amongst the supporters of the inquiry, and whose influence was most directly felt after the proposer of it, was the then Bishop of London, Bishop Blomfield. The first and minor inquiry had been carried out in the centre of his diocese, and his mind had, naturally, been turned to the value of the proposition. In addition there was in his own nature a love of research and an administrative zeal, which made him a ruler of men altogether, rather than of any section of men, however respected and eminent. The Bishop was nothing unless he was strong, and all that he wished to be connected with must be of the magnificent order. He was a great layman as well

as a bishop, and had he, by fate, entered the House of Commons instead of the Church, he would perchance have given England such a Prime Minister as she had never seen before. Into Mr. Chadwick's grand sanitary design, the Bishop of London threw himself with all his heart and strength; and I am but repeating what Mr. Chadwick has confided to me many times, that Bishop Blomfield made comparatively easy a task which, but for him, might have been delayed until the friction brought against it had been all but impossible to overcome.

As it happened the start was good. On August 21st, 1839, Lord John Russell wrote to the Poor Law Commissioners, telling them, by royal command, to institute what afterwards became the far-famed inquiry into the health of the labouring classes of the other parts of England and Wales beyond the metropolis; and in the month of November following they—the Poor Law Commissioners—addressed an instruction to their Assistant Commissioners to report upon such parts of the subject as were likely to come under their observation. So the work began, and, going steadily on under the direction of the Chief Secretary, was ready for presentation in the form of a report to the Right Honourable Sir James Graham, at that time Home Secretary, on the 9th of July, 1842.

To the letter introductory of the report Mr. Chadwick's name does not appear. The signatories are "George Nicholls, George Cornewall Lewis, and Edmund Walker Head;" but in the body of the report all letters of instruction as to mode and object of the inquiry bear the name of the Secretary, and are couched with a personality and intention which leaves no doubt as to the directing hand that guided the whole. The Commissioners themselves also state that, at their request, the report was prepared by their Secretary, from the papers and minutes of information that had been sent to them in the course of the inquiry. As large portions of the details of this extensive labour, elaborated and enforced by the guiding spirit which called them forth, are to be submitted to the reader, I need refer no further to them here, than to say that the whole were published on the sole responsibility of Mr. Chadwick,

who received for all his labour not so much as a vote or expression of thanks from those in authority over him.

INQUIRIES ON INTERMENTS IN TOWNS.

The work of the report on the sanitary condition of the labouring classes off hand, the indefatigable Secretary of the Poor Law Board turned his attention to the question of intramural interment. This subject had for a considerable time been agitating the public mind, and one of the members of my own profession, George Alfred Walker, had, with most commendable zeal and distinguished ability, kept the agitation in full current by his remarkable papers called "Gatherings from Graveyards," "Graveyards of London," "Interments and Disinterments." For a complete and comprehensive statement on the whole subject the people were prepared, and before the close of 1843 they got what they desired in a report by Mr. Chadwick, as supplementary to the report on the sanitary condition of the labouring classes, and entitled "Interments in Towns."

The document was addressed to Sir James Graham, the Secretary of State for the Home Department, in compliance with his direct request, and was made distinctly apart from the work of a commission—a compliment rarely if ever before conferred by a Minister of State on the Secretary of a Board of Commissioners of a department.

In carrying out his inquiries Mr. Chadwick had recourse to ministers of religion who were called upon to perform funereal rites; to persons of the labouring classes; to secretaries and officers of burial and of benefit clubs; to undertakers and all who were employed in funereal ceremonies. He also collected from intelligent foreigners every fact he could obtain relative to modes of interment in other countries than our own.

The supplementary report, as might be expected, was a most comprehensive and systematic statement of facts. It went much further; it suggested remedies which, as will be seen in due place, were of truly radical and reforming character. It proposed in its recommendations to make the

whole system of interment of the dead a national system,—national as to prescribed methods, and national also as to the principle of carrying the process out on one uniform design. The result was once more a compromise, but the extra-mural system, leading to the establishment of the cemeteries which are now attached to every town, was made in the main compulsory; the over-crowded graveyards of towns and cities were closed, and steps were taken for abolishing the long-established rights of burials in vaults of the bodies of persons of such wealth, or assumed consequence, that their remains deserved to be retained in the longest possible process of slow, unwholesome and dangerous decomposition.

From the day of publication of the supplementary report, on interments in towns, up to the present day, Mr. Chadwick has never lost sight of the subject. He has many times spoken and written on it, as it has presented new aspects; and he has probably had more correspondence on this topic than any other sanitarian. Some characteristic letters on the subject from distinguished men lie before me, which some day may be of curious interest. One from Mr. Thomas Carlyle I may introduce, because it relates to the question of cremation, which at the present moment is occupying the thoughts of so many persons, as preliminary to further and newer reform, legislative and national.

"CHELSEA, *3rd April*, 1850.

"DEAR CHADWICK,—I unluckily have no horse at present, and know not when I shall, though I often grumble about the want of one,—the state of the hepatic regions not being good at all. Some days I go out in utter despair, and walk four hours over the heaths on the Surrey side, rushing to and fro, all alone, in a very rabid humour;—getting a little good, however, by the operation after all!

"The *liver* of man I reckon to be one of the worst consequences, or the very worst, of Adam's Fall—unless you are up to a walk, therefore, or can bring a second horse in your pocket, there is no hope for us in that direction.

"But, on the other hand, I am at home and alone almost every evening; and shall be very glad, indeed, if you will come to me. From Friday eve till Thursday next, there is some dubiety about my being at home, as a speculation of the country is in the wind; but after or on Thursday of next week I have no engagement at all, and am very apt, indeed, to be

discoverable here any evening about seven o'clock, with a cup of tea and some silly book before me. The new Downing Street, *talis qualis*, is gone to press. I wish a number of people would fire cannon shot athwart that horrid dungheap, and bring the daylight to view again beyond it; I do not see any prospect of a change for the better in our affairs till that is reformed, and the generation of owls driven out of it a little.

"The *intramural interment* practice is a kind of thing that *chokes* one's very soul. I think such *irreverence* to the sacred existence of man was never done before by any of the posterity of Adam; the thing oppresses me with a feeling quite chaotic, almost more than *infernal*, such *irreligion* presided over by the shovel-hat was never heard of till now! I have long been of opinion that the dead, in large towns, ought all to be buried in the Roman fashion, by *burning;* one *rogus* each morning for all the dead (which would come very cheap, and *might* be very solemn), and a rich individual might have a funeral pile to himself if he were of mind to pay for it.

"This, I think, will be the real remedy, so soon as men are prepared for it; but much Semitic and other rubbish lies in the way yet.

"Yours ever truly,

"T. CARLYLE."

Now that the question of disposal of the dead is once more a public question, and the idea of establishing a crematorium in a central part of London is being launched, the report on interment is deserving of careful study once again. I have, therefore, taken pains to introduce all the suggestions made originally by Mr. Chadwick in the chapter of the second volume, which treats specially on sanitation. Mr. Chadwick's view has always been that, setting aside the all-potent influence of sentiment, or supposing that the popular sentiment should incline towards cremation, the rapid destruction of the dead body by fire would be the most perfect solution of the difficulty from a sanitary standpoint.

DISTRICT HALF-TIME SCHOOLS.

In the early part,—January 21st,—of the year 1840, the Poor Law Board addressed a letter to the Marquis of Normanby on the subject of the training of pauper children. The letter begins by recalling attention to the fact that in previous reports the Poor Law Board had drawn the attention of the Secretary of State for the Home Department to the importance

"of bestowing a provident care on the training of pauper children in industry, good morals, and religion, as a means of reducing the extent of pauperism by removing the consequences of a descent from a vicious parentage or the effects of a pauper nurture." It then conveys the information that in 1839 the Board, at the request of the Marquis, issued a letter to their assistant commissioners, desiring them to inquire into the number and condition of the schools for pauper children, and that they now presented the reports of those commissioners. In this work Mr. Chadwick again took the leading part as the organiser of the movement, which was, in fact, nothing more and nothing less than a revivification of a part of the original scheme which he had drawn up for the Cabinet, when the details of the new Poor Law Act were under preliminary consideration.

Into the scheme of reorganisation of this project for proper and perfect industrial schools, Mr. Chadwick took part in every detail. He inquired, laboriously, into the condition and wants of the English labourer from an educational point of view, taking the labouring classes into account all round,—the labourers who were employed in the fields, and the labourers who were employed in the factories. He pushed his researches into the ranks of the Irish as well as the English working classes; and on the ground that men engaged in military and naval duties ought not to be overlooked he made them also the subject of study for the purpose of securing for them a better schooling than they had ever before possessed. He carried his researches still further into a comparison of the education of eligible working men, soldiers and sailors with the same classes in other countries; and, by a close and most exhaustive examination of Mr. Albert G. Escher, an engineer of Zürich, and one of the partners of the firm of Escher, Wyss & Co., of that town, he drew out a series of curious and valuable facts bearing upon foreign labour and foreign education.

In the opinion of Mr. Chadwick this research was one of the most important and useful in which he was ever engaged. It gave origin to a system of schooling for the worst-con-

ditioned and neglected of all the poor humanity that is born in these islands, and it has been fruitful of results which surpassed his highest expectation. In the district schools of Unions which sprang from this labour, the splendid half-time system of education had its earliest practical development. In the same schools the method which he had propounded at first as a theory of education was submitted to experiment, to undergo the most searching and severe tests, and to come out, year upon year, better and better than ever.

A NEW IMPULSE TO SANITATION.

The impulse given to sanitary science by the various labours named above, began at length to form a nucleus or seed of sanitation destined to become what we now know it to be. Amongst those influenced in favour of the movement two names require to be specially mentioned; namely, the Prince Consort and Sir Robert Peel. The mind of the Prince was never diverted from the subject; and, although it was difficult for him to use any political power directly bearing on sanitary legislation, he exerted an exceedingly useful and important influence by the steady and effective encouragement which he gave to all efforts of a sanitary kind. Sir Robert Peel was not less anxious to labour in so good a cause; and, while he was at the head of the government, he appointed a commission, on the suggestion of Mr. Chadwick, to make an investigation and report on the whole subject of the health of the nation, and the means that should be adopted for its improvement. Over this commission the Duke of Buccleugh was appointed President, with Professor Owen, Dr. Lyon Playfair, Dr. D. B. Reid, Captain Denison, Mr. Robert Stephenson, Mr. Smith, of Deanston, Sir Henry de la Beche, and Mr. William Cubitt. Mr. Chadwick, being Secretary of the Poor Law Board, could not take office on the Commission, but he was incessant in the services which he rendered by pointing out modes of inquiry, supplying information, and assisting generally in making the Report of the Commission, which appeared in 1844, as complete as was possible.

CHAPTER VI.

1844—1854.

THE appointment of the Sanitary Commission presided over by the Duke of Buccleugh led to the hope that effective legislation would soon be introduced for the advancement of sanitation in all parts of the United Kingdom. But other and more critical political events interfered with the project, and for a few years delayed its completion.

Meanwhile an important change, which turned out in the end very advantageously, took place in the position and duties of the subject of this memoir. The cause of this change resulted from an inquiry which at the time was matter of comment all the country over, and which was known as the Andover Union Workhouse Investigation. Briefly told, the facts are these. In 1845 an allegation was made that some paupers in the Union Workhouse at Andover quarrelled, when grinding down bones, about the possession of some putrid marrow, and, at the same time, the Doctor of the workhouse brought a series of charges against the Master. Mr. Parker, an Assistant Poor Law Commissioner, was thereupon sent down to investigate the whole matter. The inquiry led to the resignation of the Master of the workhouse and the dismissal of Mr. Parker from his office of Assistant Poor Law Commissioner. Upon this Mr. Etwall, the Member for Andover, moved in Parliament for a committee of inquiry, but was opposed by Sir James Graham representing the Government, on the ground, that *a mere workhouse squabble in the south of England* ought not to interrupt the grave considerations of the House —bearing on the Corn Laws—at that moment. The Minister

was beaten, and a Committee of Inquiry was instituted with instruction also to discover on what grounds Mr. Parker and another assistant commissioner had been dismissed from office. The result of the inquiry was unfavourable to the Commissioners. On the motion of Mr. Disraeli the Committee recorded an opinion that the conduct of the Commissioners had been irregular, arbitrary, and not in accordance with the statute under which they exercised their functions.

In this controversy Mr. Chadwick gave evidence directly opposed to the Poor Law Board. He stated that he had given evidence upon evidence that abuses and illegal practices in the administration of the Poor Laws reported to the Board by Assistant Comissioners were disregarded by the Board, and that such representations were, in fact, distasteful to those to whom they were addressed.

A leader in the *Daily News* of August 19th, 1846, dramatises this inquiry with singular humour. "Chadwick," says the writer, "stands alone, dark and terrible as Milton's hero, confronting the whole three Commissioners, who are waxing more and more vehement. It is not easy to conceive how the belligerents can be got to meet on terms of truce." And they could not. The Board was dissolved, and the Chief Secretary henceforth devoted his labours to the work of sanitation.

He did not remain a very long time unoccupied. In September, 1847, he was appointed, together with Professor Owen, Dr. Southwood Smith, Mr. Lambert Jones, and Lord Robert Grosvenor, as a Commission to inquire into the sanitary condition of the Metropolis. This important work was concluded by a Report, which presented the evidence from thirty-five witnesses, and exposed a condition which was startling in its effects upon the public mind. The outbreak of cholera, which followed quickly afterwards, added to this effect, and caused special attention to be paid at that time to Mr. Chadwick's earnest recommendations for the introduction of the separate system of drainage. Unhappily for the Metropolis, his principles were not adopted.

Under the pressure of this report and of other projects for the promotion of the national health, the management of the

sewers of London was taken away from the varied and incompetent control of local vestries, and was placed under one Board, which at first got on fairly, but, at last, owing to parliamentary and other external influences, was broken up, reconstituted, and finally incorporated in a new body called the Metropolitan Local Management Board. At the same time a great step, springing from the report of the Sanitary Commission, was made in the formation, in 1848, of the First Board of Health, with Lord Carlisle, Lord Shaftesbury, Mr. Chadwick, and Dr. Southwood Smith as the Commissioners.

In this year (1848), at the suggestion of the Prince Consort, the Order of Commander of the Bath was conferred on Mr. Chadwick, who was one of the first selected on the list to receive the distinction for purely civil as distinguished from military service. In the same year he was appointed one of the members of the Consolidated Commission of Sewers, with an extended jurisdiction from Woolwich to Richmond.

From this time onwards, until 1854, the duties connected with the Board of Health occupied, almost exclusively, the whole time of our busy sanitarian, who was never resting from the work of putting forward some new effort which would tell for the sanitation of the kingdom at large. The results all our best sanitary authorities duly recognised, and Dr. Sutherland, in his evidence before the Royal Commission on the sanitary state of the army in 1857, brought them out in a form which deserves republication as an item of national history.

A Report published by the Board of Health in 1854 is a document which still remains before us as a standard of observation; and if the Board, which ceased this same year, had done no more than publish that work, it would have amply vindicated itself before the country.

Under political changes the Board of Health, although it has never been formally dissolved up to the present hour, ceased to be. It has been merged into the Local Government Board in association with the Poor Law Administration.

CHAPTER VII.

1854—1864.

WITH the breaking-up of the Board of Health, Mr. Chadwick's official life ended. He retired from his active service on a pension of £1,000 a year, and with his family, to which had been added a son, Mr. Osbert Chadwick, C.M.G. (late R.E.)—now so well-known for his sanitary engineering skill—and one daughter, he removed to Montagu Villa, Richmond, and finally, in 1869, to Park Cottage, East Sheen, his present residence.

But although in retirement from public service, in an official point of view, his duty as a public servant continued in unwearied course. From labours connected with the Board of Health he turned his attention to the sanitary condition of our army, which just at that time was suffering extreme privation and fatality in the Crimea. He urged Lord Palmerston, the Minister of that day, to send out to the Crimea three sanitary commissioners, who had all been employed by the First Board of Health,—namely, Dr. Sutherland, Mr., now Sir, George Rawlinson, and Dr. Hector Gavin. Dr. Gavin, unfortunately, was killed by an accident, but the other two Commissioners,—Dr. Sutherland and Mr. Rawlinson,—rendered the most efficient service in saving the second army, and in sending it back in a better state of health and strength than it had hitherto been known to enjoy at home.

In 1855 Mr. Chadwick took up the subject of the prevention of party political patronage for first appointments in the public service. In place of patronage he proposed, as tests of qualification, open competitive examinations.

In the course of his administrative experiences, he had been made aware of the evils of party political patronage, and of the want of qualification for administrative service. In the papers relating to the reorganisation of the Civil Service, presented to both Houses of Parliament in 1855, he supplied, at the request of the Government, a series of answers to the question submitted to him. "Whether he considered the existing arrangements for making the first appointments, and for promoting the subsequent efficiency of the persons appointed were open to any, and if to any, to what improvements?" In this reply he stated very freely his views on the general principles set forth in a report by Sir Stafford Northcote and Sir Charles Trevelyan, introducing at the same time his own carefully considered reasons in favour of a moderate and sound competitive method. On this same subject he also read addresses at the Statistical Society, and at the Social Science Congresses at Dublin and Leeds. His expositions of this topic were as original as they were convincing, and a vote in affirmation of the principle was at last obtained in the House of Commons by Viscount Godrich, now Marquis of Ripon,—an event which was followed by the appointment of the Civil Service Commission, and by the extension of competitive examinations as tests of qualification for all primary appointments in the several departments of the Government.

The principle has since been applied to the Civil Service for India, and to the scientific corps and line of the army. In due course, and after some conflicting opinion, it has been adopted in the United States, and applied to a service of twenty thousand officers.

In 1858, in consequence of the heavy death-rates then prevalent in the Indian army, public attention was largely drawn to this subject. I had myself in the previous year written an article, entitled the "British Juggernaut in India," in which I had shown from official reports, that a regiment of a thousand strong men, without either war or famine, dissolved away at the rate of one hundred and twenty-five a year, so that in eight years not a man of the original thousand remained. It was the same regiment in the same sense as the Irishman's

knife,—first a new blade and then a new haft, and so on interminably.

Mr. Chadwick, entering into the cause of this huge mortality, and tracing it to defective sanitation, wrote a paper on the matter, which was read before the Social Science Congress at Liverpool, and which brought the whole question before the public. He urged that the experience of the efficiency of the sanitary service gained for the second army in the Crimea ought not to be lost for the heavily death-rated army in India. This paper gained support of a very general character. It won special support from two persons of greatest weight,—namely, Miss Florence Nightingale, and Mr. Sidney, afterwards Lord Herbert. The movement thus excited led to the appointment of the Indian Army Sanitary Commission, on which the two commissioners to the Crimea, Mr. Robert Rawlinson and Dr. Sutherland, were elected, Captain Douglas Galton being afterwards added. Dr. Sutherland has remained from that time to the present on the Indian Sanitary Board.

During the next five or six succeeding years, Mr. Chadwick, taking many official duties in connection with the Society of Arts, the Social Science Association, and other public bodies, continued still to collect information on sanitary engineering for removal of foul substances and water from houses; subsoil drainage for super-saturated building sites; open spaces for suburban residences; and agricultural drainage for the prevention of rheumatism, ague, and malarial fever, as well as for increasing agricultural products. He then struck upon a new vein, from some experiences he had obtained on sanitation applicable to the tropics. He had learned the particulars of a series of distinguished preventative works for the sanitation of the town of Boufaric, in Algeria, and as this appeared to him peculiarly instructive in relation to camps and cantonments for the civil population and colonisation of India, he got Earl de Grey, Minister of War, to direct, in 1864, a special committee, which was going to Gibraltar, to examine and report on what had been done for prevention of disease in Algeria, and on any advancements they might find applicable for the protection of Her Majesty's troops serving in India or at tropical

stations. The Commissioners sent out were Dr. Sutherland as chief, Colonel C. B. Ewart, R.E., Mr. Robert Ellis, C.B., and Dr. Paynter, Deputy Inspector of Hospitals.

The information obtained by this Commission formed, perhaps, the most striking evidence ever recorded in favour of sanitation. It was found that the death-rates amongst the military had been reduced from eighty to thirteen in the thousand, while the children, of whom it had been believed, as in India, that a third generation could not be raised on account of the deadly nature of the climate, were as ruddy and healthy as those in the most healthy towns in France, with a birth-rate greatly exceeding the death-rate. How little these curious facts were known to the ruling classes of the last French empire may be gathered from the circumstance that, when on a later day Mr. Chadwick met the deposed Emperor Napoleon III., at Brighton, and, with the pardonable pride of a sanitarian, referred to the Algerian experiences, the ex-Emperor declared that this was the first time he had heard that so great a triumph for science and humanity had occurred under his reign, although he had himself paid a visit to the Algerian colony.

CHAPTER VIII.

1864—1887.

THE construction of the great exhibition in Paris in the years 1865-6, filled the mind of my friend with many subjects of peculiar interest to him; and, in the following year, a visit to the exhibition itself afforded him what he was pleased to call an "instructive holiday." He spent a long time in Paris, and, as we shall see in another page further on in this work, he made a most careful analysis of the different modes of building and on furnishing houses on sanitary principles. During this visit he had an interview, more than once, with the Emperor Napoleon III., in one of which interviews the often-repeated story is told, in which Mr. Chadwick, on being asked by the Emperor what he thought of Paris, is said to have answered, "Fair above, Sire, foul below." The answer was not quite in that form. The answer really was as follows: "Sire, they say that Augustus found Rome a city of brick, and left it a city of marble. If your Majesty, finding Paris fair above, will leave it sweet below, you will more than rival the first Emperor of Rome." Napoleon, mightily pleased with the suggestion, entered into the subject very fully, and, on my friend's instance, directed an inquiry into the subject referred to, and into the application of the sewage of Paris to agricultural purposes.

In all matters in which he has been connected with France during his career, Mr. Chadwick has felt the most pleasing associations. Like his predecessor, Bentham, his works have, in fact, been as widely known and appreciated there as in this country. His reports on the sanitary lessons of the Paris

Exhibition won for him warmest approval and thanks; while, the sincere appreciation which he has shown for the great French political economist and philanthropist, Turgot, who first saw the principle of free trade in corn, has added still greater lustre to his name and work. These kindly sentiments called forth the observation of the *Revue Internationale*:—

"M. Chadwick est une des gloires de l'Angleterre. Il a quatre-vingt-sept ans, et il est pour l'Angleterre ce qu'est M. Chevreul pour la France" (*Juin* xime, xiiime *Livraison*).

The same warm sentiment and appreciation of labour led also to the distinguished honour of his election as a corresponding member of the Academy of Moral and Political Science of the Institute of France.

In 1867 Mr. Chadwick was invited to stand for Parliament as representative of the University of London, and a committee of the electors was formed to secure his return. In support of his candidature he received the most satisfactory communications from men whose opinions were of all others valuable. Mr. John Stuart Mill wrote to him as follows:—

"No one whom I know of has devoted so great a portion of his life, or so great an amount of mental power, as you have done, to the study of the scientific principles of administration. The course of your official life has continually brought you into contact with the most difficult administrative problems, and you have so well used the opportunities it afforded that, among all the administrative questions which you have touched (and they are both numerous and of the highest importance), there is hardly one on which you have not originated thoughts and suggestions of the greatest value, some of which have been carried into effect with distinguished success, while the merit of others has been manifested by the consequences which have followed their neglect. On several of the most important branches of public administration, you add to your knowledge of principles a knowledge of details which few can rival. I need only mention the Sanitary Department, the importance of which, now so widely recognised, you were among the very first to press upon a careless public; the various branches of the administration of relief to the destitute; and many parts

of the great subject of the education of the poor, which is destined henceforth to be one of the most anxious cares of our public men of all parties, and which it is next to impossible to make really efficient, except by means and on principles repeatedly pointed out by you."

I may say at once that the candidature of Mr. Chadwick was not successful; but his address to the electors is so worthy of him, and is such an excellent epitome of the motives and character of his life and works, that a brief analysis of it is singularly appropriate here.

He began his address by showing that he took a part in the first steps that led to the development of the University. He sketched his course of study from his earliest work as a reformer, and coming to the great question of National Education, he narrated that he had been in favourable positions for observing the results of different methods of training and instruction, and of the great differences of results obtained, with like courses of instruction, by good and by bad teachers. In some conditions of teaching he found that not above one child out of three succeeded in getting into productive employment; whilst under other methods of physical training and instruction, the failures to do so amounted to little more than two per cent.; while in after-life four or even three persons so trained were made as efficient as five without such training for the purposes of ordinary labour. He had derived a strong impression of the great economy of employing trained and superior teachers even in the most elementary schools, and of the great mischief done to the elementary education of the people by mistakes in legislation, which lowered the quality as well as diminished the number of the pupil-teachers and caused several of the training colleges to be shut up. Finding, from much observation, that the proper employment of the usual long school hours greatly exceeded the children's capacity of attention, he had introduced into the Bill for the regulation of the labour of young persons in factories a provision requiring as the condition of employment a school teacher's certificate of the child's having been three hours daily in a school. The provisions made were crippled in legisla-

tion, and still further in administration; but after a considerable time they had prevailed, and the principle of the measure had, by an Act just passed, been extended to upwards of a million of children. He had advocated the transference, as much as possible, of military drill and systematic gymnastic training, from the years of full bodily vigour and capacity for work, to the non-productive school, which, besides saving much of the expense of military training in after-life, had actually increased the aptitude of children for productive industry. His opinions on that subject had been extensively quoted in the United States of America and in Canada, and were in course of practical application there by State grants. On the question of military reorganisation, they have been quoted in the Legislative Assembly of France.

In his view an income of upwards of a million per annum is worse than wasted in endowed educational charities, and other charities, that ought to be made available for a national education. In respect to middle-class education, he had moved a memorial from the National Association for the Promotion of Social Science, to the Government, praying for an inquiry into the management of the funds for endowed Grammar Schools, and into the other means of middle-class education. The memorial had been well supported, and the Commission had been granted.

In respect to superior education, it had fallen to him to examine and recommend a principle of administration by which it would be powerfully affected. From his knowledge as to the beneficial effects of the competitive examination as tests of fitness for first appointments to the public service in France, he had been the first in England to advocate its adoption, in an article, published in 1829. He had repeated its advocacy at a later period in a paper written for Mr. Gladstone, and in papers read before the British Association at Dublin and at Leeds. The principle had only yet been applied to a part of the public service, and in methods which demanded much amendment, especially as to the position required to be given to the experimental sciences. But, so far as it had been applied it had succeeded in a manner that justified, and would in time lead to, its general application.

His early service in Poor Law administration had brought him into contact with the works for the formation of the first railway, and had led him to observe the great amount of pauperism that was created, and the maimings and injuries done to the labourers, by the reckless manner in which the works were conducted. He had obtained a committee of inquiry on the subject, which led to the provisions known under the name of Lord Campbell's Act, imposing responsibilities on directors or conductors of works for the consequences of culpable negligence. He had also been led to examine the principles of legislation applicable to railway works, and to advocate their being maintained as public highways by a responsible public service, as had been done in Belgium, Switzerland, and other great continental states, with the result of lower fares, safer and more convenient service, greater security, and better returns of dividends.

By the desire of Mr. Gladstone, he had examined the economy of a general system of cheap postal telegraphy, as in Belgium and Switzerland, and had made a report thereon.

It was for the members of the University to judge whether these large organic questions were more worthy to be promoted by them, through their representative, than those usually brought before common constituencies. These questions involved advanced applications of the sciences more or less specially cultivated by various sections of the members of the University. The Public Health question alone involved all the sciences which minister to health—the new sanitary science, medical science, engineering science for the purification of the air of towns, and structural science for the improvement of the sanitary qualities of dwellings and their economy, on which he had made a report bearing on the model dwellings in the International Exhibition for the British Commission. National education involved psychological science and physiological science. These, and the questions of national police and the freedom and security of internal communication, involved also some advance in the science of legislation, and in that of public administration.

It was for the sake of these objects, and of no other, that he

had accepted the candidature offered to him. Having no personal objects in view, he abstained from canvassing the electors in any other mode than by earnestly pressing on their attention the claims of the subjects on which he hoped he was capable of making himself useful.

Other proposals, that Mr. Chadwick should have a seat in the House of Commons, came from Evesham and from the Kilmarnock Burghs; but both failed, not greatly to the distress of his friends, many of whom felt that his best services were most likely to be useful out of Parliament.

In 1871, during the Secretaryship of the Duke of Argyle for India, a plan for the drainage of Cawnpore was submitted by the Duke to Mr. Chadwick for examination and report. This plan involved a great fundamental principle for the drainage of cities. It was on a principle which had made some way in England, and was being pressed for extension in India. The plan suggested was what was called "the combined system" of the discharge of the rainfall,—including extraordinary storm water,—through the same channels as those for the removal of sewage, or fouled water from houses with the construction of very large tunnel sewers for the discharge of the rain from the greatest storms. Mr. Chadwick in his report gave illustrations in favour of what is called "the separate system,"—namely, the removal of storm water by distinct channels, and of fouled water and excreta by separate self-cleansing house-drains and self-cleansing sewers, on the principle of "the rainfall to the river by the natural channels, the sewage to the land," which method he had elaborated and advocated from the first for the sanitation of towns. He supplied plans of the small-sized pipe drains and sewers that had been found to suffice at home for the purpose, and had enabled three towns to be drained well, at the cost of draining one ill, with the large main-sized sewers which so often become extended cess-pools. The principle set forth in his report was approved by the Government, and copies of it, with the plans, were forwarded to all the sanitary authorities in India. It is now adopted decidedly by the Army Sanitary Commission, who have recently issued plans with more of detail for the execution

of house and town drainage works on the separate system of house drainage and underground town drainage.

The report on the drainage of Cawnpore was the last subject on which Mr. Chadwick was consulted by the Ministry, and with that his extra-official life, if I may be allowed so to express it, has been thus far concluded. In other directions his industry has remained unabated. He has filled the presidential chair of the section of Economy of the British Association for the Advancement of Science; and of the section of Public Health of the Social Science Association. He presided over the Sanitary Congress of the Sanitary Institute of Great Britain, held in Stafford in 1878, and over the Section of Public Health of the Sanitary Congress of Brighton in 1881. He has communicated papers to the Société d'Hygiène of France, of which society he is an honorary member.

The last important public work of Mr. Chadwick has been the position of President to the newly and recently formed society of sanitarians, the Association of Sanitary Inspectors. This association, one of the most useful of the sanitary bodies, turned naturally to him as the father of modern sanitation for his countenance and support,—a support as willingly given as it was earnestly requested, and which for some time past has brought forth a presidential address, which is looked for as one of the sanitary events of the year.

In a gentle and appreciative memoir on the late Horace Grant "as a successful experimentalist to determine the receptivity of children in primary education" Mr. Chadwick, in these his later years, has shown a facility for biographical research which adds a new illustration of his versatile and many-sided capacity, while it shows equally the sympathy with which he shares the work of other and strictly cotemporary scholars. In this essay he fully justifies the opinion formed of him by a judge of character, the late Right Honourable Sir James Stephens, than whom few, I presume, could be found more competent.

"As a moralist he has denounced one of the most common and culpable and yet most unheeded, of the sins which prevail amongst us—I mean the sin of falsely pretended knowledge—

the sin, that is, of spontaneously undertaking highly responsible duties without the knowledge requisite for the efficient discharge of them. As a philosophical inquirer, he has proposed or suggested the question :—Why is it that the progress of social science is so slow and imperfect amongst us, while the progress of physical science is so rapid and effectual? And he has answered it by observing, that while they who teach us the laws of the material world never advance to any inference until after the most exhaustive scrutiny into the premises from which it is drawn, they who address us respecting the well-being of the commonwealth are continually arriving at practical conclusions under an almost incredible ignorance of the grounds from which alone they could be safely deduced."

To these views of this distinguished Jurist, Messrs. William and Robert Chambers, Drs. Marks and Willis—the authors of the learned work on the "Decrease of Disease by Civilisation" —Lord Liverpool, Lord Brougham, Mr. Charles Dickens, Sir Robert Rawlinson, the illustrious Richard Owen, and a host of others, have added their testimony. But, after all, there is no testimony like the works of the man himself; from them, as they are laid open in the forthcoming pages, let the judgment come.

For so much labour on behalf of the health of this nation, and of all nations which profit by English industry, no public man of this century has received so few public rewards or favours as this man who, born with the century, stands probably at the present moment of it, when compared with others of the same term of years, absolutely alone in the possession of ability, enthusiasm, and genius. Happily no rewards, no thanks can surpass those which have come so richly and so silently in the results he has lived to see as the fruits of his labours;—the foundation of a new life-saving science; the gratitude of the best and wisest of mankind; enrolment amongst the imperishable names of those who have given health to men.

[redacted]

INTRODUCTORY NOTE

TO

VOLUME I.

INTRODUCTORY NOTE.

AN ORIGINAL LIBRARY.

THERE surrounds me at the time I am collating these volumes a library of no contemptible size, a library which the most industrious scholar could not, I think, read igh, with any hope of being master of it, in less from two to three years. Part of this library gned with the author's name; part of it is ymous. Part of the matter of this library has prepared with close and orderly study; part of s been cast off in speeches and debates, which been fixed by reporters, aided sometimes by ion from their author, and with much correct- but at other times without such revision, and, fore, with some obscurity of exposition. Part, , of this library is composed of matter which is nplete in its form; a suggestive section, if it be so described.

ie first instalment to this library dates, as near can learn, from the year 1828, in the form of a st little essay, unsigned by its writer, on the ct of "Life Assurance." The latest instalments the date of the year 1885-6, are signed by writer, and are on the subjects of "Physical cation and Physical Training of the Young,"

and other kindred subjects. The library, consequently, is the work of fifty-eight years.

The subjects embraced in this collection of learning are so varied, it is very difficult to classify them in such a way as to put them into anything like fair division. The subjects interweave, and yet they are often entirely distinctive in character. Not one essay can be said to be wanting in a certain relationship to every other, and still each essay, even when it confessedly bears on another which may have preceded it, has a degree of independence.

THE WORKS AS A WHOLE.

Two Ideals—Unity and Prevention.

When the various parts which make up the whole of these works are carefully studied with a view to the understanding of their leading characteristics, one particular feature is the most noticeable of all, namely, the aim at unity of design in all departments treated of. The idea of unity in them all, is for prevention of evil. This all-prevailing idea is brought out, without any reference to order, in different essays. It springs forth on the most accidental occasions. In a speech, in a report, in a letter, the preventive idea is always to the fore,—prevention of crime, of pauperism, of disease.

It sometimes happens that the title of an essay and the general construction of it appear to lie apart from any practical consideration. The work reads, at first, as an effort in abstract, and is so planned that it must be read once, twice, thrice, before the object for which it was intended is understood. But

when once the key to the intention is found, the meaning flows easily enough.

In this mode of dealing with the subjects in hand, there is no acting, no designing plan; neither is there concealed motive nor devised stratagem. It were difficult to find any works less capable of advocacy of a project on such lines. They are the most natural of works—the idea of prevention of great evils their basis. Whatever is written, unless it be something that relates to matters indifferent to the favourite pursuit, is imbued with the one prevailing and dominant idea. It is necessary for these facts to be clearly understood in order that the intention and the character of the writings may be fully comprehended.

The range of topic is wide, at times diffuse. The object is unity of action for prevention of evil.

Under this general conception there is suggested also throughout the works, the promotion of knowledge and the extension of knowledge, as the root of all that is progressive. If there be any check on human knowledge there can be no prevention of the greatest national miseries which have to be prevented. If knowledge be free, and in free operation, then prevention is omnipotent, and what is called cure a myth. With knowledge free and effective, there would be nothing to cure, no crime, no poverty, no disease. These evils would not exist, and the learned classes who live to supply the remedies for them, and who, in turn, live by their remedies, would not long exist.

In the above sentences I have tried, in a few words, to give the general spirit which pervades the works of this unique library. With the appre-

ciation of the spirit, the key is given by which its contents can be understood as a whole, and by which what some have called a confusion of ideas may be brought into order. There is no confusion when the order and intention of the author are clearly understood.

An important influence which has helped to prevent these labours from being fully known and recognized in regard to their prime source, is the anonymous form in which many of the very best of them have been presented to the public. A good critic might, from the style, detect the authorship, but the number of such critics is limited in the extremest degree, and those who are sufficiently critical to be master of the subject are not, as a rule, men whose minds run in the same line of thought. They therefore, unless they were professionally engrossed in the enquiry, would not be likely to offer any observation on essays the titles of which would not immediately attract their attention to the subject matter.

The anonymous writings appear in diverse forms. They sometimes are in the form of a review. At other times they come out in a report, or in a summary of a report, in which many persons have been engaged. I have before me at this moment a long report of a committee of which I was a member. The report bears the name of the secretary, on behalf of the committee, but in fact every word of that document belongs to the library to which I now refer. Another similar instance of the anonymous is in relation to the first efforts that were made for removing the taxes on knowledge. Any one who reads Mr. S. Carter Hall's most interesting retrospect of a long life will find the

names of Lord Brougham and of many more prominently noticed as the leaders of that movement. Any one who will refer back to the papers of the time when that movement occurred, will find reports of public meetings at which the late Dr. Southwood Smith and others took a prominent part. But the name of one of the most devoted of that reforming band, and largely the strongest advocate of it, will have no place of recognition; and the reason of this is that the said advocate, our author, adopted the plan of putting forward his own views, by reviewing other persons' views anonymously in the leading organs of the public opinion of the day. Thus the important part he played was concealed to all except the small circle of contemporaries with whom he was most closely connected.

To what extent this anonymous influence was brought to bear on many other topics I cannot say. The author of the library I have before me does not himself remember, and has retained neither copy nor note of an immense number of review essays which came from his pen in his early career.

To return to the parts of the library that are in our possession. There is one other quality in them, which, although subordinate to the great principles of unity and prevention, is still distinctive and impressive. Throughout there is a reliance on fact as the basis of comment, which is rarely met with in any other collection of literary works. The writer may be declaring himself, and may sometimes seem to be declaring himself dogmatically, but the declaration is always based on some matter of collected evidence that has gone before. This mode of expression has its disadvantages. It leads the

casual reader to feel that he is dealing with a man who is ever reasserting himself; and as the opinions deduced from the evidence never fail to be strongly declared, the opinion is apt to be read without the study of the bases upon which it rests. Nothing, however, is more widely apart from the truth than a reading on such mode of judgment. I am unable to find a single instance in any of the essays in which an opinion, in the commonplace meaning of that term, is offered. Anybody can give an opinion on anything; and the man who is content to give his opinion and no more may be extremely popular, because he leaves himself an easy prey to the better or worse opinions of others. But here opinion is not offered. Doctrine derived from evidence takes the place of opinion. The doctrine may be right, the doctrine may be wrong; it may be easy, it may be hard; it may be acceptable, it may be most unacceptable; it may be in accord with popular sentiment, it may run counter to all popular sentiment; it may be confirmatory of belief, it may be subversive or corrective; whatever it may be, and however coloured by the personality of its proposer, it rests on evidence, and until the evidence is disproved it remains uncontroverted.

Before I close this introduction it will be advisable for me to define a little more fully the spirit in which the idea of unity for prevention of great wrongs and great evils is advanced in the works we have under review. The unity suggested may seem autocratic in character; yet every reform that is proposed is placed on a democratic footing, with, if I may so say, an intellectual ruling idea springing out of the democratic feeling and pervading every part. The doctrine enunciated in relation to every depart-

ment of social life dwelt upon, is that fractional national efforts can never effect great national reforms, and that mediocrity can never become the promoter of progress. Fractional administration, therefore, which is the feeder of nothing beyond mediocrity, can never prevent, and will never get beyond tinkering efforts at what is called cure,—a contemptibly second-rate service in every community that depends upon it.

The philosophy of government, as here implied, is so new to the masses of the English people as they at first look at it, that it conveys to them ideas of imperial rather than of national sovereignty. At the same time it is the fact that, practically, the nation is drifting into the very courses which the author of our library has, theoretically, indicated.

Local self-government, as it is called, the government by fractions and by pure mediocrities, is clearly not working satisfactorily now that a superior popular intelligence is observing its working, calculating its cost, and estimating its results. The process of meeting great national evils by letting them come to pass and then trying to cure them, backed though it may be by a routine dating from the earliest recorded history of man, is not maintaining its rule and ascendency. Healers are being very much set upon in these times, while men who by their skill would make the healers an extinct race are daily receiving more and more commendation. With these changing views the problem comes forward for solution: How shall the nation supply, for governmental purposes, the highest intellectual power from itself, and how shall it invest that power with the authority to exercise its will for the common

good without endangering individual liberty? How shall practically applied knowledge be used for the prevention of great national evils without the infliction of a tyranny that might be even more oppressive to bear than the evils themselves?

In the library which we have before us at the present moment the scheme that is laid for unity in prevention, with freedom of individual action,—except when the common good is interrupted by freedom,—is foreshadowed by a master who for over half a century has had the problem always before him.

What that scheme is, how far it is practicable, what is its probable future, are the subjects considered in nearly every page of these works.

In this first edition of the present work I can make no pretence of placing before the reader a review of all the essays I see before me. That would indeed be impossible, unless many volumes instead of two were collated. What I undertake to do is to select for review, from the essays, such portions as contain the substance of the whole, so that the all-important teachings may be rendered apart from the masses of detail.

In order to place before the reader the materials intended to be used, in a methodical and simple form, I shall arrange them in two volumes in the following order.

For the first volume I shall select from those essays or expositions which may be placed under the head of DIRECTIVE SCIENCE, including subjects:—

A. POLITICAL AND ECONOMICAL.
B. EDUCATIONAL AND SOCIAL.

For the second volume I shall select from those essays which deal with PREVENTATIVE SCIENCE, including:—

A. PREVENTION OF DISEASE. SANITATION.
B. PREVENTION OF PAUPERISM. POOR LAW ADMINISTRATION.
C. PREVENTION OF CRIME. POLICE ADMINISTRATION.

Unable to bring our author's works in their entirety into the two volumes, originally determined upon, I have classified the materials placed before me according to their nature, so as to give the pith of everything without repetition or burdensome detail. In carrying out this process I have, in some instances, condensed several pages into one, omitting, I trust, nothing essential. In other instances, where condensation was not necessary or possible, I have presented the author in his own words, dividing his material into chapters, and classifying each chapter under its proper head. To enable the reader to distinguish between my abstracts of the author's work and the author's text, I have ventured, after the manner of the reviewer, to put his own words in inverted commas, leaving mine without any such indication, and bringing the whole into the form of a comprehensive review.

VOLUME I.

PART I.

POLITICAL AND ECONOMICAL.

CHAPTER I.

ESSAYS POLITICAL AND ECONOMICAL.

THE section of works which may be classified under the above head are met with from first to last in the collection. They appear sometimes in the form of distinct essays, sometimes as portions incidental to other essays bearing, ostensibly, on matters of a different character. They appear also, in like incidental manner, in speeches and addresses delivered on public occasions, in debates, presidential openings, and even in after-dinner speeches; whenever, in short, and wherever occasion has offered itself for their presentation.

Some of the essays have been thoughtfully prepared in the study, others have been thrown off on the spur of the moment, without preliminary preparation. For these reasons the critical reader may perchance sometimes detect a repetition of statement, although the greatest care has been taken to avoid this occurrence.

About this part of the general work there is a peculiarity which marks it out as different from any other work of the same description in our language, during this century. In the social portion the wants and necessities of the people are considered without reference to any special class of the people. No lines are drawn differentiating classes, but a general

exposition is tendered of the kind of social progressions that would tend to help all the grades of society, and produce an advance by which the nation, as a whole, would be lifted up and made more contented and happy. The limited rich, consequently, are not set above the masses of the poor on account of their riches, neither are the masses of the poor set above the rich on account of their massiveness. In the second volume the classes of the country are specifically treated of, especially in the parts relating to education and pauperism and health. Here all are treated as a family.

In carrying out this method of treatment, reference is nowhere made, in so far as I can find, to social and political peculiarities connected with birth and race. The various races of which the community is made up are treated as if they were all one, without any distinctiveness whatever. The Jew, the Saxon, the Kelt, and the Gipsy, all, in short, who are settled here, are included equally in the teaching, as if "one blood" were exclusively recognized, and as if it were felt by the author as a genuine belief that, in the end, the one-blood principle would be so triumphant as to make universal goodness of universal application.

In the treatment of subjects which admit only of being called political there is again another decisive peculiarity. It would be impossible to tell, from the writings which make up this series, of what party in politics their author was a member. There is no colour of party in any one line or expression. Governments of various periods are referred to. Ministers of various periods are referred to. Acts and labours of different governments and of different ministers are a frequent theme, but never in regard

to party measures, party reasons, party influence, nor, if there be such a thing, party logic. Underlying, indeed, all that is written, there is a studied ignorement of party, an indication that the thing that is useful, if it be done, should alone be recognized, and that all in the way of party spirit connected with it should be looked on as so much sounding brass and tinkling cymbal, a noise lasting but a moment, and neither worthy of record nor remembrance.

Neutral in the most signal way in the matter of social and political party, there is, notwithstanding, no lack of policy. Policy and party are separated as if they were incompatible, but of policy without party there is an abundant store offered in such a form that a party student of any colour might gain from our library a treasure of useful measures as befitting to his portfolio as to any other. Some day it may be thought worth the labour to collect these parts together and extract from them their practical intention and quality.

It is deserving of still further observation that in the section of the library we are now looking at there is an entire absence of what may be designated technical philanthropy. Considering the ultimate aims of the work; considering the spirit of it; taking into account the grasp of it, it may be accredited as being the most truly philanthropical labour that can be met with, and yet it has none of the pretence of philanthropy, none of the taint of that virtue.

The reason for the apparent absence of the philanthropic tone is not far to seek. The reason is that the object of the author is not to favour any particular design simply because it bears the signs of being good-natured and kind and merciful, but to

forward what, on the whole, is for the general good, irrespective of the sentiment which is commonly thought to be the essence of such efforts. In a world made up of feeling and feelings, this departure from the sentimental is not always attractive. The true object held in view is but indistinctly perceived in many cases, while the idea of subjection of practical sentiment to some substantial utility is, as a rule, a prominent feature. They, therefore, who would understand the author before us, correctly and completely, must take care never to lose sight of the wide objects he has in view; the subordination of all minor plans to the major; and the resolution that whatever may be the immediate interpretation of the intention, the ultimate end to be attained shall be sound and logical.

There is one other peculiarity in these writings which, before I proceed to analyse them, deserves notice. There is in them no political epigram, no attempt at social proverb. This is in many respects a source of regret. It divests the literary matter of sparkle and of that brightness and pointedness which makes literature as a method of learning so tempting a field for the learner. On the other hand, there would be much lost if the arguments which are placed before us were tinselled out or put in such a form as to make them, for the sake of literary ornamentation, different from what they are. They are not intended to astonish; they are not intended to amuse; they are hardly intended to gratify. They are intended to convince, and with such earnestness is that intention carried out, it were mere flirtation with conviction to give the subject any different form than that which it wears. If the author had been fluent in narra-

tive; if he had utilised the art of speaking by dialogue; if imaginative construction of any telling kind had been a part of his genius, there would perhaps have been a more rapid and general public appreciation of his labours. It is better for his future fame that what he has written is in its natural mould, unadorned and adorned the most.

CHAPTER II.

PRACTICE AND PROGRESS.

THE first of the essays which come under the political and economical head of subjects, and the first also in order of time, bears the date of April, 1828, and is on the subjects of Life Insurance and the Value of Life.

It was presented to the readers of the date named in the pages of the *Westminster Review*. The precise title of the work is, "An Essay on the Means of Insurance against the Casualties of Sickness, Decrepitude, and Mortality;" and with additional notes and corrections it was re-published by Charles Knight, of 22, Ludgate Hill, in 1836. There are very few essays in our language which are more interesting or instructive. It reads with a three-fold interest attaching to it throughout.

In the first place the essay is remarkable for the history it presents of a memorable period half a century ago. In the second place it supplies us with our author's first and original views on various matters of practice affecting national progress, of the qualities of mind which lead to the arrest of progress, and of the qualities helping on progress; all of which views are so many aids to the understanding of the moving spirit of the author himself. Lastly it affords us an excellent survey of the special

subject on which the essayist particularly dwells, life insurance, as it was in 1828, together with a review of the life and health of the nation at a period immediately before the railway system commenced its reforming and civilizing spell. We may study the essay through each of these stages of it in the present and succeeding six chapters.

Social History, 1828.

The essayist speaks of the period in which his paper was written in a manner rather surprising to us of the present day. He congratulates society on the improved value of life that is being accomplished, owing to a great improvement in the general mode of living, amongst the people, during the previous twenty years. The higher classes are represented as more temperate and less afflicted with *ennui*, "the disease of unfurnished minds." The vice of hard drinking is declared to be on the decline, and to be so unfashionable that he who would be desirous of seeking distinction as a six- or four-bottle man would be classed with those persons of humble station who are advertised by the announcement of the exploit of eating a whole leg of mutton with a proportionate quantity of candles in the way of dessert. The physical condition of the aristocracy is presented as greatly improved; the "spindle-shanked lord" of Fielding's time having become, partly by better habits and partly by plebeian alliances—"in obedience to the general law of nature," which is effectual for the improvement of the lower animals—replaced by persons generally taller and better made than their parents.

The habits of the labouring classes are also described as being much amended. These classes are depicted as having gained somewhat in knowledge, and in habits of more varied and temperate enjoyment; and of having been recovered, in the same proportion, from that tyrannical control of single appetites and passions, to use, without restraint, the means of immediate gratification which distinguish all ignorant people of whatever rank.

The domestic habits of artizans are noticed with equal commendation. Artizans are said to be less filthy and irregular than formerly. Their houses were better constructed; they had acquired some notion that fresh air is conducive to health, and the streets where they resided were less filthy and pestilential. When to this enumeration of the causes of reduced mortality were added the further extensive reductions occasioned by vaccination, by less injurious nursing in infancy, and better medical treatment, enough of particular facts had been indicated to sustain the general conclusion that if the condition of some classes might have deteriorated, the sum of improvement in the entire community preponderated considerably.

It is worth while to wait here for a moment to notice the fact, that in the sentences copied above we have the first indications of the sanitary labours of our author, labours which have since been such a fruitful source of honour to himself and such an extended blessing to the world. At this early period of his career—he was then in his twenty-sixth year—he was already studying the condition of the health and social well-being of the different classes which he afterwards comprehended as the ruling, paying, and

wage communities. At that period, while his mind was yet young on the subject, he expresses a satisfaction as to the improvements he sees in progress, and is, it would appear, content. In later writings, when the whole field of observation has been laid open before him, this content departs. We shall see, indeed, in future pages, that he is to become one of the keenest spurs to national activity in all national progressions towards national health; that his complaints of slow and disconnected efforts are unceasing; and that he looks upon the continued state of backwardness as the most deplorable and most foolish fact of the current century.

Not only have six-bottle men passed into the past, but one-bottle men have shared the same fate. As compared with 1828, the habits of all classes have changed still more mightily for the better. The factitious and tyrannical luxuries of the titled classes have come down to modest proportions in comparison with those of 1828; the huge retinues of slavish retainers have been curtailed; the wanton extravagances of the table, the gambling-house, the brothel, and the prize-ring, have been largely suppressed; the crimes of luxury, once winked at generally, and often secretly envied, have, to a considerable extent, become less visible as crimes, and have been concealed from public gaze, even when too freely condoned. The homes and habits of the wage classes have risen towards a better and purer state, as the homes and habits of the rich have descended towards the same, and if angels have not been brought down from the skies, mortals have been raised towards them.

The contrasts of half a century must surely be

most marked to him who is old enough and intelligent enough to remember the two periods, and to strike their contrasts, contrasts of the Regency and of the fiftieth of Victoria.

The author of our original library is old enough, and still acute enough in every intellectual quality, to remember both periods, and to contrast them. But his latest observations, less hopeful than his earliest, do not speak so admiringly of the progress which has of late been made. They indicate, on the contrary, but one desire, the desire to hasten the time, now moving far too slowly, when the reformations that are demanded for the common good shall be accomplished by the only mode of rapid accomplishment, the force of knowledge, and the practical application of that force through concentrated and instant propelling unity,—unity in purpose, in system, in result.

Practical Men.

In other details of the essay before us, we come next upon a few passages which are essentially characteristic of the authorship. I refer to an early tilt made against persons who set themselves up as "practical men" under the assumption that because in some science or art they have learned, perhaps to perfection, a certain number of technical details, therefore they are the masters of the science or the art, and have alone a claim to be recognized as the authorities upon it. This position is here assailed with impetuous force.

The common reliance on the accredited testimony of "practical men" is declared to be founded upon an

assumption, "that those who have been long engaged in a particular pursuit must necessarily have obtained, or at least are likely to possess, the whole of the existing knowledge relative to that pursuit, and must, therefore, be the most competent to form a correct estimate of it in all its bearings." This assumption of completeness of information, as predicated of the whole class of practical men, is held to be untenable. "By nothing are such persons distinguished as by their indifference to the progress and result of any investigations which may be carried on relative to that pursuit, and to the utility of any new facts that may be elicited with respect to it."

The declaration of opinion respecting the class of practical men, sweeping as it is, is supported by the evidence yielded by some of them before select committees of the House of Commons which sat in the years 1824-27 to report on the laws respecting friendly societies. Two reports, it appears, were made to the House on the subject,—one in 1825, the other in 1827,—and before the committees many witnesses, who were practically engaged in the work of insurance, appeared. It must be conceded that they did not present a very advanced phalanx, and their shortcomings gave to our author fair opportunity for his general criticism on the "practical," and justified his severe animadversion on expert knowledge. "Some of these, who had made up their bundle of opinions in 1791, did not care to open it for the purpose of substituting in the place of those which were old and rotten others which were new and sound. What mattered it to such whether or not the circumstances of society had been altered, and the duration of life extended since 1791? It will be found, in the

great majority of cases," continues the author, "that the routine of practical men being given, you have the whole of their information relative to their avocations. To their indifference to the reception of any new facts, and the consequent incompleteness of their information for any practical purpose, may be added their incompetency to weigh evidence, free from bias, in most cases of moneyed interest, and in nearly all cases of the interest arising from the loss of reputation which would be incurred by acknowledging that others were in possession of superior information, or were capable of making a better application than themselves of the information already possessed."

The argument against practice as a bar to progress is extended from the "practical men" engaged in the work of life insurance to men of other avocations, and some amusing incidents, current fifty years ago, are cited in proof. A complaint was made to Parliament that the fees extorted from prisoners at the sessions were so considerable, that the court and jury, from motives of compassion, conspired to convict a poor man in order that he might be fined a shilling and be discharged from further payments. Sir James Scarlett, one of the popular lawyers of the day—afterwards known as Lord Abinger—hereupon rose in the House. He candidly admitted and lamented the existence of the evil, but declared that he could not see how it could be remedied. Then followed Mr. Peel, afterwards the great Sir Robert, who ventured to say, in reply "to the greatest of practical lawyers," that he humbly conceived the evil might be remedied by abolishing the fees.

Men of the practical form, as thus depicted, are

held to be "as little fitted for advancing public action as a hackney coachman or a chairman"—the chairman evidently still held his own—" would, from his practice, be fitted to judge of a comprehensive plan of direct and convenient streets devised by Sir Christopher Wren for the rebuilding of an old, ill-built, confused city. Such men are useful, and often meritorious, in their proper places. They may suggest the straightening of an awkward turn, the stopping up of a hole in which they themselves are jolted, or the removal of a wall against which they have run their own heads; but the formation of new, simple, and direct roads, and especially any great convenience or magnificent simplicity of combinations, are as much beyond their comprehension as they are foreign to their habits. From such minds comprehensive legislation or decisions upon large principles never did and never will proceed."

There is a further development of this merciless tilt against practical officialism, which it would really be wrong to let pass in a day like the present, when, almost as ever, the Tite Barnacle system is so admirably exhibited. Mr. Dickens may, in fact, have read what is now to follow with profit to himself and to the public through him.

Our author, dealing with parliamentary progress, asks, " When do we see any of the masterpieces of foreign legislation referred to in our Parliament, although they would afford the most valuable instruction? "

The report of Michel St. Farjean on the Penal Code, presented to the Constituent Assembly in 1791, and the debate which ensued upon it, may be submitted as a contrast to every State paper,

and to the display of knowledge on the same subject during any session of the English Parliament from the same period to the present day. But who has ever used it or referred to it in our country?

"The legislation of the great majority of our rulers who lift their heads aloft above instruction,—who praise their own groping in the dark under the name of practice, and abuse as theory and speculation all attempts to act upon extended knowledge and afterthought,—is a scene of continual fumbling and botches; of amendments upon amendments, often producing new evils, and aggravating the evils which they were intended to rectify. The legislation upon prison discipline and upon the licensing systems might be adduced in illustration of the assertion. The object of the more consummate of these official and practical statesmen would seem to be not 'to commit themselves'—*i.e.* to do nothing; or, to evade difficulties neatly and speciously, and cover with pomp or a bland routine the *dolce far niente* of office;—averting their heads from calamities so long as they are unnoticed, and letting evil principles work themselves out on the community, unless they are forced into notice by clamour. The best of the practical men of routine are those whose pride slumbers, who are not roused to resist amendments proposed by others, and who merely follow as rules of office the old monk's rules of life: "Go through your business in a way to excite no complaint; always admire and praise everything done by your superiors in office or party; and only see merit in those by whom you are likely to be ousted. Receive your salary quietly; get yourself into no troublesome

opposition, but let the mad world go on as it will go; for it will always go as it will go."

While the practical men are thus severely trounced, the mere theorists, and even the advanced theorists, are not altogether permitted to escape as if they, on their side, were devoid of error. So far from this, some really interesting touches of information are supplied relating to such men, which remind us of the philosopher in "The Last of the Barons," who fell short of glories by sticking at trifles; not trifles to him, but to us who know. Thus we are reminded of the fate of a great inventor who was outwitted by a "practical man."

The inventor had constructed a most important and complex machine for work on cotton fabrics, and in full confidence in the soundness and completeness of the inductions upon which his invention was based, called together all his friends to see it start. The power was applied, but lo! the machine could not be got to move.

A shrewd practical man looked on. He would make the machine move on the condition that he received a share of the profits. The inventor consents. The practical man, still practical, pushes his bargain closer. He must have, before he acts, the security for the share of his profits signed and sealed. The practical man and the inventive man retire into the counting-house and clench the contract. The practical man puts the document, which is to bring him a fortune, safely into his purse as a matter of course. What next? It is very simple. He returns to the obstinate machine; he takes from his pocket a piece of chalk, with which he rubs one of the rollers to prevent the fibres of the cotton from

adhering to it. In an instant the vast machine is in motion. It works completely and with entire success.

Another, and almost as good a story, is told respecting Winsor, the inventor of the system of lighting cities and towns by means of gas. Winsor promulgated his plan by a proposition for a joint stock company. He promised enormous profits, but his plan was ridiculed as wild and visionary. It was, as we now know, sound; but he had by inadvertence overlooked as an incidental and minor item the cost of the pipes that were to convey the gas.

The men of widest range of thought may, therefore, it is admitted, go wrong in matters of detail. But after all, and with all their imperfections on their heads, they surpass even in practice the self-styled "practical men." The greater part of those who laud themselves as practical are, of all others, the most infected with rash and baseless speculations. So that, on the whole, it may be laid down as a general rule that "unless the mind of a practical man has been trained to habits of generalizing beyond the details of his profession, his conclusion as to the effect of any extensive change in his practice is less to be relied upon than that of any other man of equal general intelligence, to whose mind *the same facts* are presented, and who gives them an equal degree of consideration. Yet it is the evidence of this class of practical men which, in all questions of change and improvement, governs the opinion of our legislators and of a large portion of the public. It is important to have the real value of such evidence understood."

What was thus stated by our author as applicable

to the early part of the century, prevails towards the close of it nearly, if not quite, as actively as ever. Fifty, sixty years have wrought but little difference indeed. If, now, any great question comes to the fore, it is the "practical men," as they are styled, who are consulted; or if men of wider views are, for a moment, consulted, in emergency, when none other are of any service, their best suggestions are so straitened and modified by the practical mongers as to be of very little service for the immediate occasion. In time, and when they are forgotten, neglected, or dead, the views of genius may be worked into form and life; at the beginning they are the works of visionaries who are only listened to to be laughed at, and who must wait before they can be recognized. In our day the correctness of the argument of our author is still too often seen in reports of Royal Commissions, and in Parliamentary debates. Sir James Scarlett and Mr. Peel may, figuratively, be often heard debating once more in the same form and with the same species of advocacy.

The value of the argument relating to practice and progress put forth by our author, lies in the courage, the clearness, and the originality with which it was adduced. There was no straining at the gnat and swallowing the camel. The plain truth was told in all its plainness; as if though every doubt about it were asleep, as the German poet says, the truth could never be told enough. Irrelevant somewhat to the subject under which it first appeared, it is an irrelevancy so relevant as to command gratitude. The lesson educed was that practice in one course, pursued as an unyielding principle and arbitrator, is

the opponent of progress: and that although it may beget a shrewdness of intellect which shall win a temporary success and admiration, and although it may be useful within the limits of efficiency, it is a dead-lock when it opposes invention and the impulses of an original mind.

CHAPTER III.

THE VALUE OF LIFE.

WHEN our essayist arrives at the subject proper of his work on "Life Insurance," he still halts now and then to touch up the "practical men." Some Russian fruit dealers had been accustomed, when they had sold the fruit out of one of the panniers with which their asses were laden, to put stones into the empty pannier to balance that containing the fruit. "My good man," observed a bystander to one of these fruiterers, "would you not save your beast much toil and yourself some trouble if, instead of filling the empty pannier with stones, you were simply to divide the apples and put half the contents of the full pannier into the other one?" "I do not know how that may be," replied the practical man, "but this is the way I have always done it myself, this is the way my father did it, and my grandfather and my great-grandfather before them, and I won't now call all of them, and myself too, fools by trying any of your new-fangled schemes."

The anecdote is related as bearing on some of the notions which the practical men of 1825–27 held on the question of the improvement in the value of life in this country.

At the time when these enquiries were in progress there were in use, by persons engaged in the business of life insurance, four sets of tables, from which the values of lives about to be insured were calculated.

The oldest of these was the "Northampton table," which had been formed by the celebrated Rev. Dr. Price from the bills of mortality kept in the parish of All Saints' Church, Northampton, during the years 1735—1780. The parish contained about half the inhabitants of the town.

The next set of tables was called the Swedish. The tables were constructed upon returns carefully collected in the years 1755 to 1776 from the whole population of Sweden and Finland. They were corrected by other tables deduced with equal care from other returns, officially compiled during the years 1775 to 1795, and 1801 to 1805.

The third set of tables, six in number, was formed by Monsieur de Parcieux. One of this set was calculated from the mortality found to prevail, mostly from 1689 to 1696, amongst the nominees of the French Tontine. Four were formed from the registers of the deaths among the monks of four monastic orders in Paris. Another table—the first ever calculated to show, separately, the duration of female life—was formed from the registered deaths of the nuns of Paris.

The fourth and last set of tables was formed from observations made during the years 1779 to 1787, upon a population of eight thousand persons resident in the city of Carlisle. The facts were carefully collected by the celebrated Dr. Heysham, and the calculations founded upon them were accurately conducted by Mr. Milne.

Of these four sets of tables the one in most common use was that formed by Dr. Price, and called the Northampton table. This was the table recommended to the parliamentary authorities as the one representing the average mortality amongst the population of this country, and as peculiarly applicable for governing the assurance against risks among the labouring classes, by whom chiefly benefit societies are formed; because, as the author puts it, it was on the safe side; not representing the duration of life too favourably, so as to call for premiums insufficient to cover the risks incurred, nor too low to ensure the stability and prosperity of the establishments. The practical men, of whom so much has been said, were in favour of this set of tables. They insisted that Price had corrected his results by information derived from the casualties of other towns, and that their general applicability had been confirmed by experience. They also held by a proposition, which had been advanced by Price, that mortality invariably follows the rate of sickness; in other words, that mortality is always proportionate to the causes of it. They further, by their mode of evidence, conveyed the idea that the value of life had not improved, and was not undergoing improvement.

The grand economical question which our essayist raised, in treating upon the tables quoted above, and on the evidence that was delivered upon them, was that the whole of the argument to the effect that the value of life was not improving, was an entire fallacy; that the value was improving; that sickness did not absolutely govern mortality; that conditions, which were quite independent of sickness, did govern mortality; and that by modifying, favourably for life, those in-

dependent and external conditions, not only might days of sickness be lessened through the whole community, but that mortality from sickness and from other causes which are not technically connected with sickness, but of which sickness was an outward and visible sign, could be so indefinitely reduced that natural death alone should be the order of march from the cradle to the grave.

The argument here adduced, in a few pages, is memorable in respect to the after subject-matter of the library on which we are engaged. The argument supplies the keynote to the meaning of probably three-fourths of all the rest of the material that lies before us. It supplied, for the first time I believe, the definite and impressive idea that mortality amongst mankind might be separated from disease, and might be treated preventatively, without, in many cases, the slightest reference to disease as the necessary and provoking cause.

In this argument there was set forth two states—healthy life and absolute death. Between these two states disease was placed as it had been previously placed for untold past ages. But nothing could be more dissimilar than the status given to disease in the old argument current through the past, and the new argument which sprang, as if by one vital bound, into existence. By this new reading disease was depicted as a mere accident, a secondary agent in the course of death from life. In fatality, disease was not the first cause of the death. The disease had its antecedent or its antecedents, and that antecedent, or those antecedents, could be traced to other agencies lying outside both the living and the dead. The disease, in a word, was the indication of the

path, or paths, from life towards death. It was a direction—nothing more.

On principles of reasoning so founded, the evidence of the practical men, that a calculation of mortality, founded on facts derived from a limited locality, was reliable as a calculation for other localities and for later times, was treated as a piece of clockwork exposition altogether; out of the court of reason, and contemptible but for the false importance attached to it.

The mode of exposing the truth of the new argument, as well as the mode of exposing the fallacy of the old one, was alike original and ingenious. The authorities who reasoned on the clockwork principle were examined by their own evidence, and were made serviceable for the new theory out of their own mouths. The service so rendered was extracted and applied in several ways.

In the first place it was shown, from the evidence of many of these authorities, that the value of life had improved in childhood. Mr. Glenny, one of the advocates who adhered to the old view, held, nevertheless, that amongst children life had increased in value. The fact was clearly stated by Mr. Glenny. He had, he reported, been for years trying to form a table to provide something for children during their minority, and had been completely baffled by the difference of life in children within the last twelve or fourteen years—1812 to 1826—so that he had been obliged to go over the whole ground again. In his opinion the lives of children had increased one-fifth in value.

Here was direct evidence that in one large class of the community the sickness and mortality view of

Price did not hold good; and the evidence was specially valuable, in proof, because in children the diseases which precede and which seem to be the chief causes of mortality are most rife.

Mr. Glenny expressed another view that told in the same direction as the last. He was of opinion, from his experience, that the value of adult life was also on the increase. The increase was not so broadly marked as in children, but it was discernible. This evidence was used, as a matter of course, for proving that the value of life was on the increase.

Mr. Glenny produced a further statement, which, coming in the form of a paradox, enabled our author to make more clear his own views respecting sickness and mortality, and the relationship which the one holds to the other. Mr. Glenny stated that sickness might increase and mortality still remain stationary. He deduced this notion from the observation that in certain trades the workmen were more subject to sickness than those who worked in other trades, and yet the mortality was not greater. Gilders were mentioned in proof of this statement, and next to gilders, casters in lead and workers in lead of all kinds. The members of the first of these classes—gilders—were very subject to sickness owing to the debility caused by the mercury which they were obliged to use; the second—the workers in lead—had rheumatic pains, affections of the joints, and many disorders which prevented them, periodically, from following their business; so that they were turned out of, or rather were not permitted to enter, most of the benefit societies. But it was not observable that the mortality of the said classes was greater than that of other classes. In like

manner watchmakers were described as subjected to special diseases; they were affected in the sight, and were apt to "go into declines," in which states they hung longer on the benefit funds than other persons, frequently without dying at an earlier period than others. Husbandmen were subjected to much less sickness than "almost any species of mechanic, and they also lived longer." Upon reasoning of this kind our essayist took occasion to place more fully forward the true relationships of sickness and mortality. Sickness, it is quite true, plays a secondary part in the production of mortality. But to say, therefore, that sickness can be increased and mortality remain stationary is manifestly foolish, being equivalent to the statement that irrespective of accident, persons in good health might die. "That men lose their sight without their general health being materially diminished; that the diminution of life from the effects of injuries which disable a man, and, in some degree, also debilitate his general health, may often be compensated by his exemption, as a pensioner, from hard labour, wear and tear, and consequent loss of vitality incident to his avocation, no one will dispute; but that a whole class may be debilitated by sickness without the duration of life being impaired is an absurdity."

The absurdity was ably illustrated by reference to the returns drawn up by M. Villermé—name of a great French statistician now all but forgotten—from the hospitals of Paris, in which returns it was shown that disease was not more frequent amongst the rich or middling class than amongst the poor, but that it was more frequently fatal amongst the poor, and that "the gradations of wealth, or the means of pro-

viding comforts, may be almost taken as the scale of mortality." Thus in the higher classes of workmen, such as jewellers, printers, and compositors, who entered the Parisian hospitals in those days, one in eleven died; among the shoemakers or brick-makers, one in seven; amongst the stonemasons, one in six; amongst the common labourers, one in five; and amongst the poorest classes of all—the porters and rag merchants—one in four. The figures of Villermé as to hospital mortality were likewise brought to bear, by a contrast of the mortality of the French soldier in hospital, one, only, in twenty; the soldier being placed under much more favourable conditions to resist disease than any of his artizan compeers. The analysis, altogether, of the evidence was very complete, and the inference drawn from it was most conclusive to the effect that there could be, on the large scale, no such thing as a stationary mortality with increasing sickness; in other words, that sickness, as the forerunner of mortality, is dependent —like mortality—on causes antecedent to both.

At first sight it does not appear easy to grasp the two distinctive propositions which have above been stated. To say that mortality does not invariably follow the rate of sickness, and to say at the same time that the rate of mortality cannot remain stationary while the rate of sickness increases, seems a confusion of ideas, if not a contradiction. It is, however, when fully comprehended, neither a confusion nor a contradiction. The reconciliation of the two assertions is perfect when the discovery is understood that both sickness and mortality have a common origin, and that external circumstances govern both, except in so far as natural death—

which is not attended, necessarily, by any sickness—is concerned. The reconciliation teaches that a man may be sick and may not die; therefore the rate of mortality is not, of necessity, proportionate to the sickness. It also teaches that in the vast majority of instances the mortality is preceded by sickness; therefore an increase of sickness, on the large scale, will be followed by an increase of mortality. There will always be more sickness than mortality, but the rate of the sickness will depend on the surrounding conditions which lead to sickness, while the rate of mortality will not only depend upon the same conditions, but will be modified by the constitutional and other personal conditions of those who are attainted with sickness.

The grand lesson that was conveyed by the teaching was that if, instead of waiting for the foreshadowings of death in the shades of disease, the world would take means to prevent the foreshadowings, both disease and mortality would be reduced in proportion to the success of the effort.

The whole argument was carried still further by a comparison instituted between the relative mortality of the two sexes. The practical men who gave their evidence adduced, in evidence, that the general mortality was greater, within the range of natural life, in males than in females. It was not contended that males had more days of sickness than females, but it was certain that within the range of natural life they had a higher mortality. The fact, according to our author, was proof that it was not sickness alone which determined mortality, but sickness accompanied or unaccompanied by other influences, which lie apart, and which must be studied and thoroughly

understood ere ever the reduction of sickness and mortality can be brought under human control.

We have before us in these reasonings—which, resting on evidence of an exact kind, are like experimental results—the dawn of the scientific sanitary work which in the present day is making such rapid progress. I doubt, however, if the basic principle which lies at the root of all sound sanitation is clearly comprehended by the vast army of sanitary reformers. I know that in the rank and file of that army, various and varied so-styled practical details and inventions are the working tools of the sanitarian. I know that the majority are quite content to let their science rest on the construction of a new drain-pipe, an improved closet, or a ready method of detecting or removing impurities and defects of the school, the hospital, the house, the town. Far be it from me to say a word that should, in the least, discourage such excellent labour, which is all, though it be blind, in the right direction. But I feel it, in this place, a duty to point out where the separation from the old and imperfect systems of making health occurred, and how and by whom the philosophy of sanitation was inaugurated for the health of all nations that should learn it and profit by it.

CHAPTER IV.

LIFE AS A COMMERCIAL PROBLEM.

THE study of life values contained in the original work discussed in preceding chapters was fertile in the development of correct notions on the duration of human life. In it was clearly indicated that the value of life was slowly but steadily on the increase. In it there was held out the hope that this good sign, so distinctly marked in a period still of imperfect social standing, would, under happier future circumstances, be destined to advance with quicker steps. In it there was discussed, for the first time, in good philosophical or scientific spirit, the great topic of the natural duration and commercial value of human life. To this last topic, as cast in the essay, I propose to devote the present chapter.

I may anticipate here a few lines to say that the ideas set forth by our author at this early period of his career were as peculiar on the subject of the duration of life as upon the question of sickness and mortality. To this day his views remain peculiar, as we shall find in future parts of this work. To this day, that is to say, he attaches to human life a possible natural duration which has only been endorsed by a few of those who have studied the matter thoroughly,

and by that very limited few, less diligently than some other and less important speculations.

The peculiarity of view to which I refer was that human life might not only be saved from death during its known realizable period, to an extent which at first sight was incredible, but that the life might be extended to a much longer period than had ever been considered possible in regard to mankind as a whole. There had been admitted exceptions of length of life connected with individuals. These were, however, looked upon as sufficiently rare to be phenomenal in character, and entirely away from the common lot. The words of the Psalmist, "The days of our life are threescore years and ten," were accepted as purely literal; and so strongly was this notion upheld that down to a late day more than one man of letters has been energetic in protesting that there is no truth of an extension of human life, in any case, to the span of a hundred years.

Our author took no exaggerated view on this subject of extension. He let pass the ideal of rejuvenescence, then popular in some of the German Schools; he let pass the idea of offering to mankind an existence of one hundred years. That might or might not be; he had another view which was nearer to the point, and predicative of what might come in the future, for the good of the future.

In the argument here noticed, the author commenced once more to make an analysis from the expert evidence before him, and to deduce from that evidence the conclusion that had been disclosed to his mind as to the monetary or commercial interests involved in the study of sickness and mortality.

According to the Northampton tables the probable

duration of a life already at 20 was 33·43 years; at 30, it was 26·27 years; at 40, it was 23·03 years. In 1828, the time when this paper was written, the duration of a life at 20 had extended to 41·05 years; at 30, it had extended to 33·97; at 40, it had extended to 27 years. These facts came out on the evidence of Mr. Morgan, the actuary to the Equitable Society, then perhaps the most flourishing and important of the Life Assurance Societies.

Some further and most important facts were drawn from a report by Mr. Finlaison, who, as he himself records, had "six years before been appointed by the Government expressly for the purpose of investigating the true law of mortality which prevails amongst the people of England at the present time." The result of his researches was to show that he had discovered an extraordinary prolongation of human life in the course of the last hundred years. The prolongation had taken place in both sexes. Mr. Finlaison included in his enquiries, not merely the parochial tables or records upon which reliance had, before his time, been mainly placed, but, by the aid of Government, the lives also of annuitants of various classes who had been registered as nominees in Tontines or life annuities, properly so called. He made observations upon nearly 25,000 people in those positions during a period of more than thirty years, and the consequences resulting from such observations upon each was shown in a paper exhibiting the expectation of life as it was in the beginning of the second quarter of the present century, and as it was a century before. The difference of expectation was proved by that paper to be nearly as three to four. That is to say, the duration of life in 1725, compared

with that of 1825, was as three in 1725 to four in 1825.

In addition to the tables constructed upon the basis of the lives of the Government annuitants, who belonged to the higher and middle ranks, Finlaison calculated the mortality that prevailed from 1814 to 1822 amongst 50,682 out-pensioners on the books of Chelsea College, and 20,210 out-pensioners on the books of Greenwich Hospital. These two sets of lives were somewhat of an indifferent order. The great majority of them had come in under forty-five years of age. They were either persons who had been wounded or who had lived for some time in unhealthy climates: yet the chances of these lives were at every age better than the chances given by the Northampton tables, and after fifty were as good as those given by the more favourable tables founded on the Carlisle standard.

Still more and equally interesting information was obtained from Baron Delessert, the founder of the Philanthropic Society of Paris, from which it was gathered that in France, as in England, the value of life had improved with the improved habits and condition of the people. The annual death-rate in Paris, during the age of chivalry—the fourteenth century—was 1 in 16 to 17. During the seventeenth century it was 1 in 25 to 26. In 1824 it was 1 in 32·62. When the other parts of France were added to the capital, the proportion of deaths appeared still further to have decreased; and throughout the whole of France, the deaths during 1781 were 1 in 29. During the five years preceding 1825, the deaths were 1 in 39. The inference drawn, and as it would appear fairly drawn, from these data, was that the

value of life in France had doubled since "*le bon vieux temps*," and had risen to nearly one-third after the Revolution.

The facts of the increasing value of human life under the influences incident to civilization, thus deduced from various sources, were soon recognized in many of their important bearings. In an able work by Marx and Willis, on the decrease of disease by civilization, they were accepted as the source of inspiration in the dedication to our author which those learned commentators attached to their modest yet admirable little volume. The facts have also been largely used by our author himself for the elucidation of different subjects in sanitation and vital economics. In the essay now under review they were made to apply all but exclusively for economical teachings, by which application they fitted most directly to matters of insurance. The arguments, by no means palatable to the parties most pecuniarily interested, were unmistakably useful to the nation.

It could hardly have escaped the most careless and incompetent reader of parliamentary returns on the subject, to observe, that in proportion as the old insurance tables represented the duration of life below the true rate, to that extent the public money was laid out improvidently in granting annuities, that is, in contracting, on consideration of the payment of a given sum, to grant a certain annual payment so long as the person who had paid the given sum should live; because if the life so insured was likely to live longer than the estimated time, the sum paid was inadequate, and while the individual profited the State lost. It was obvious, too, that some of the insurance companies had, by

a converse method of insuring the lives of people —that is, of contracting to pay a sum at the death insured upon receiving a yearly premium— become extremely and unduly rich on the basis of the old insurance tables, because they had insured on data which undervalued the years of payment between the first premium paid and the last which preceded death.

By this error two great evils were perpetrated. State money was misapplied on one hand for the benefit of particular individuals, and private money was misapplied on the other hand for the benefit of insurance societies.

It added to the evils, thus detected, to discover a further fact, namely, that private insurance companies would not grant annuities on the same terms as the Government granted them, for the simple reason that they had detected the inadequacy of the sum demanded by the Government on the old scale, and that while the old scale suited insurance business admirably, annuity business resting on the same calculation was a losing game.

To what extent the State money was expended ruinously by the grant or annuity business was illustrated by the following details.

On an average of the preceding hundred years, the price of 3 per cent. stock had been between 79 and 80. At that rate of interest, and the rate of mortality which, according to Mr. Finlaison, actually prevailed among the Government annuitants, the annuity which ought to have been allowed on a life of sixty for every hundred pounds sunk, was the sum of eight pounds ten shillings and sevenpence; whereas the annuity actually allowed on

that age for every hundred sunk was ten pounds six shillings and threepence. There was thus incurred as a loss to the country the sum of one pound fifteen shillings and eightpence per cent. every year on the remainder of every life which was calculated at a duration of fifteen years.

The matter of deferred annuities was next investigated, with the effect of showing that deferred annuities were granted on even more unfavourable terms. It was detected that the value of one pound annuity purchased by a person of the age of forty, but which he was not to begin to receive until the age of fifty, was above eight years' purchase, or fifteen pounds eight shillings per cent., whereas it ought not to have exceeded twelve pounds ten shillings per cent. The absolute loss to the public so incurred was estimated as amounting to two pounds eighteen shillings per cent. during the remainder of the life.

Some further details were wrought out bearing on the relation of sex to the value of life and to annuities estimated on such value. Finlaison's figures and arguments were again employed to show that the difference between male and female life was very considerable in every period of life, excepting under ten years of age, and extreme old age beyond eighty-five, when no distinction was observable in the returns. The women were shown as having the best lives, and the general truth was well illustrated by a quotation from the well-known actuary—Finlaison.

"Supposing a mother were to leave a pension to her son, the value of such pension would only be two-thirds of a pension left by a father to his daughter, the relative ages of children and parents being precisely the same. It follows, therefore, that any

society making no distinction of sex, and granting pensions to widows according to strict mathematical result, would inevitably be ruined."

I do not propose to follow our author through many more details, but there are one or two I must not omit, because they indicate how acutely he traced out the evils above depicted, and how keen a political reformer he was, by natural bent, from his earliest public life.

It was expected that with a set of tables calculated according to a rate of mortalities derived from the experience of the long lives of the Government annuitants, that the nation would, in future, be protected from loss by the sale of annuities. It was not so. "The vigilance of individuals surpassed that of the department of administration." It was quickly perceived that if persons at a very advanced period of life, who were in more than a usual good state of health and soundness of constitution, were selected for annuities, enormous gain might be made. If, for example, the price of stocks were from 91½ to 93, the price of an annuity of twenty pounds a year, so long as a person of ninety should live, was thirty-one pounds nineteen shillings and tenpence. By three half-yearly payments of the annuities to the persons thus situated, those persons got back nearly all their purchase money, and if the purchaser could only live on until four, five, six, or seven half-yearly payments were received, the gain of the proprietor of the annuity was prodigious.

This fact gave rise to a brisk speculation, and the mode in which the temptation to speculate acted was as adroit as it was successful. Several gentlemen of fortune, and it was said some bankers, sent to the

most healthy districts and sought out individuals of advanced age who were in a superior state of health, of fine constitution, of long-lived families, and who had laid out large sums of money in the purchase of annuities to be received so long as these persons should live. The adventurers carried their shrewd trade to the extent of supplying the persons whose annuities they had secured with every physical and moral inducement for length of days. The annuitants were furnished with all the comforts suitable to their years, and medical men were employed to be ready at every moment to render professional assistance. Everything, in short, was done to make the life of each annuitant as long as possible, and after the trick was discovered a whole parliamentary session was permitted to pass before a stop was put to it.

At the time when these commercial mistakes were going on, the Commissioners for the Management of the National Debt were paying 4½ per cent. upon all deposits from Friendly Societies and Savings Banks. Soon after the Savings Banks were brought into operation, the market interest of money being below 4½ per cent., it was found that investments were being made in great numbers by far different persons from those for whose benefit the institutions were intended. The detection forced the Government to interfere, and the Legislature thereupon enacted that no more than two hundred pounds should be received from any one person. On this provision our author was down in an instant. He insisted, and there is no point of his essay which was more keenly pointed, that instead of limiting the amount of the deposit, the Legislature ought to have met the impcsition by simply reducing the

rate of interest paid by the commissioners to the level of the money market. As it was, the commissioners, when they had received the deposit of the savings banks, purchased stock with it in the market. The current price of stock, at the moment when the criticism upon the system was being made, was 86¾, yielding an interest of three pounds nine and twopence per cent.; and as the deposit interest was as much as four pounds eleven shillings and threepence, the loss to the public purse was at the rate of one pound two shillings and a penny on every hundred pounds received. So, urged our critic, when a depositor can obtain for each hundred pounds he deposits as much interest as would come from one hundred and thirty-one pounds nineteen shillings and sevenpence laid out in stock at 86¾, it need excite no surprise that these deposits amount to the enormous sum of upwards of sixteen millions of money. In consequence of these inducements the legislative enactments were set at defiance by persons who, besides their own deposits, made fraudulent investments in the names of various members of their families, their relations, or their friends, while the legislators attempted to cultivate good habits amongst one section of the community, and bad habits—it might have been said very bad habits—amongst another.

The influence of these reasonings had a most salutary and quick effect. Before the essay passed into its second edition in 1836, the writer of it was able to announce that the interest on deposits had been reduced, and that the reduction was attended, as was anticipated, by a withdrawal of the larger deposits, while the deficiency had become supplied

and the amount raised to twenty millions by the increase of smaller deposits. Still the interest exceeded that which was derivable from the public funds.

The practical,—if I may without offence apply that much-abused word to a production of our author,—the practical deduction derivable from the various classes of facts relating to the commercial value of life, in a political sense, was that, as the value was increasing, Governments have no right on any pretence whatever to risk money on arbitrary rules respecting such value, or to depart from strictly commercial rules in the management of the money that may be committed to their charge. Admitting, to the full extent, the importance of giving encouragement to economical habits, it is false to suppose that the payment of bounties is necessary for such a purpose, or that more is requisite than to extend to investing parties that superior accommodation and greater security for investment which it is in the power of the Government to afford.

CHAPTER V.

VALUE OF LIFE IN PRISONS.

IT is very well known amongst sanitary scholars that the author of our original library has of late years directed attention, many times, to the increased value of life which falls to the lot of those unfortunate members of the community who for various offences are cast into our prisons and are confined for long periods there. In this line of research and exposition I have taken part with him, but to him is due the credit of having long since led the way to the light which now shines on this curious and important economical subject.

In the essay under review the idea is first broached, —first, I believe, by any thinker or writer,—that prison life might be, under some circumstances, more conducive to life than free life under certain other circumstances. These views were deduced by what may be called the inverted application of some enquiries instituted by the French statistician, M. Villermé, to whom reference has already been made.

Villermé enquired into the question of the amount of mortality in all the prisons of Paris. He proved from these enquiries that the average annual mortality in the Paris prisons was about one in twenty-

three. Comparing the prison mortality thus estimated with that of France altogether, he concluded that to be sent to prison for one year in Paris was equivalent to a deprivation of about twenty years of life.

Our author, commenting on the statements of Villermé, confirmed them generally in relation to one particular class of prisoners in England, namely, those who were confined in debtors' prisons. On these institutions, and on Chancery as the highway to them and their mischiefs, he dealt out with a merciless hand a series of short heavy blows, which the genius of Dickens, fired I suspect by the perusal of this essay, afterwards made ring so clearly that all England felt the vibration. "Will any Howard, will any Villermé in this country," our author exclaims, "ever investigate the average mortality among suitors in Chancery? Having witnessed individual instances of the ravages of its long, anxious, and tormenting process on the life of suitors, and seen a suit attended with more deadly effects than a fever, we may seriously believe that the amount of the deprivation of life amongst the victims of this detestable court would almost be found equal to the average loss of life in any hospital in the metropolis."

But while proclaiming these evils in language so decisive and trenchant, there was put forward a statement on the other side which had afterwards to become the root of a very different story. In the French prisons the high mortality was obvious, and in the English debtors' prisons it was more than probable, if not proven. In the ordinary English prisons, however, it was suggested that the same rule might not hold, because in England prisoners are often better lodged and fed than the classes out

of prison from whom they are taken. Then follows a suggestion, since carried out, for determining the average mortality which prevails amongst the various classes of prisoners, in order that, from the results, the effects of various modes of punishment may be ascertained.

The author of these views and original suggestions on the value of life in our prisons has lived to see what falls to the lot of few men indeed to enjoy, namely, the exactness of his observations, tendered over half a century ago, and the correctness of the inferences he drew from them. He has lived to see so great an improvement in the value of life in our great prisons that they, in so far as such value is concerned, have become the model institutions. In them there is now, relatively, a lower mortality and probably a lesser sickness than in the most luxuriously appointed and comfortable houses in the commonwealth; a result which more conspicuously illustrates the preceding view, insisted upon by the same author, that between healthy life and death disease is a mere incident, dependent upon the same external causation as the death itself, and with the death preventible when the external causes are controlled. Epidemic poisons shut out of our prisons; famine shut out; luxury shut out; drink shut out; idleness shut out; exposure to cold and wet shut out; the acuter and most destructive kinds of mental worry shut out; the hungry strain for to-morrow's bed and board shut out; the baneful association with criminal life at large shut out!—what more natural than that, with the new addition of personal and environing cleanliness, sickness should be reduced to a low figure, and mortality be brought to the lowest standard, as

in some military prisons, where it is under five in a thousand?

The thing done, and the results known in these later days, the wonder has ceased, and all has become commonplace. None the less honourable, and able as well as honourable, the mental gift which, in theory, foretold the results for the long period of fifty years before they were realized.

CHAPTER VI.

DAYS OF SICKNESS AMONGST THE MASSES.

SOME points of much national moment are introduced relating to days of sickness amongst the masses of the people.

Mr. Finlaison, in endeavouring to collect materials for estimating the sickness and mortality prevailing amongst the labouring classes, found in the navy pay-office a pay-list received annually from each of the then seven dockyards. From this he obtained evidence of the age of every workman, artificer, or labourer in those great establishments; the amount of his wages or earnings in the year; and the number of days on which no wages were received by reason of sickness, the fact of such sickness being always verified by the public medical officer. In his analysis of this document, Finlaison found the amount of sickness amongst those under fifty years of age to coincide very closely with the average of sickness reported by the Highland Society from returns of benefit societies in Scotland; and on comparing both these returns with some made to the adjutant-general respecting the sickness prevalent in the army, the amount of such sickness appeared to be three times the average of that indicated by the Highland

Society. Discrediting at the time the possibility of the amount of sickness reputed in the army,—a doubt, by the way, which he afterwards rectified,—Finlaison adhered to the returns of the Highland Society as the best and almost the only data, then existing, of the probable amount of sickness amongst the labouring classes of Great Britain. Returns were procured from seventy-nine benefit societies situated in sixteen counties of Scotland, and were made up from the books kept during various periods, in some instances extending from 1750 to 1821. The aggregate number of members on the books was 104,218.

From tables drawn up for the society from these data by Mr. Oliphant, it was inferred that a working man would experience at 21 years of age 4 days' sickness in the year; at 46, a week; at 57, 2 weeks; at 63, 3 weeks; at 65, $4\frac{4}{10}$ weeks; at 66, $5\frac{4}{10}$ weeks; at 67, $6\frac{6}{10}$ weeks; at 68, 8 weeks; at 69, 9 weeks; and at 70, 10 weeks; after which the proportion of sickness would go on so rapidly that the individual was placed beyond the means of insurance possessed by any of the institutions. The society also found, as a near approximation to the truth, that the average duration of sickness for each person under 70 was 10 days, 2 of which were assumed as days of "bed-fast" sickness, 5 as days of walking sickness, 3 as days of permanent sickness.

One other series of facts were added, in the collection of which our author himself took part, in combination with Mr. Tooke and Dr. Southwood Smith, the three acting as commissioners constituting the central board of the commission to inquire into the

effects of labour in factories upon the general condition of the operative classes.

These commissioners obtained returns from the directors of the then famous East India Company, returns which show that "John Company," as the directors and the great body they represented were ironically called, was not quite so bad and selfish a fellow as he was generally supposed to be up to the very day of his death. "John Company" no doubt had his faults, and he paid for the having. They were the death of him. But "John" had a few virtues, and one of his virtues was a certain degree of care and consideration directed towards the labourers working in London under his employ, a body of working men which, at the commencement of the period, when the commissioners began to estimate the days of sickness, amounted to two thousand four hundred and sixty-one.

The calculation as to the days of sickness of these men was based on records of ten years. During that time a sum of one shilling and sixpence per day had been paid to every man during sickness, and precise details were retained in respect to every such case. The result was that the average duration of sickness, according to age, for every man employed, ran:—For those between 16 and 21, 4 days; between 21 and 26, 5 days and nearly a-half; between 26 and 31, 4½ days; between 31 and 36, 4½ days; between 36 and 41, 5½ days; from 41 to 46, a little over 5 days; from 46 to 51, nearly 5½ days; from 51 to 56, 6¾ days; from 56 to 61, nearly 7¼ days; from 61 to 66, 10¼ days; from 66 to 71, nearly 10 days; from 71 to 76, over 10½ days; from 76 to 81 over 12½ days.

In regard to the sick themselves, as a distinct community, during this period, it was further shown that, under all the diseases from which they suffered, taken in classes, for the whole space of ten years, there was a relative duration of period, which varied according to the ages respectively named above. The range varied from fourteen days for the youngest men—during the ten years—to nearly thirty-nine for the oldest; the scale rising steadily, though with some fluctuations, with each five years of life. The fluctuations are very interesting in their bearings on later researches which I and others have made on periods of life and periods of disease. The first fluctuations occur between the age of 41 to 46, in which period there were recorded only 22¾ days of sickness, as compared with 23¾ between the age of 36 to 41, and 22¾ between the age of 41 and 46. A second fluctuation from the steady rise occurred between the age of 51 to 56, when there was a rise from 23½ in the preceding five years' average to over 28½—a rise of almost 4 out of the proportion common to the series, and a rise which was continued during the next five years, to be followed by a further but moderate rise in the five years still later on—namely, from the age of 61 to 66.

A last fluctuation occurred from the age of 66 to 71, when there was a sudden fall in the days of sickness from 31¼ to a little under 27, succeeded by a return to the higher average of 29¾ between the ages of 71 to 76, with a sudden further rise to 38 between the ages of 76 to 81.

These were, in brief summary, the series of facts collected by our author, half a century ago, on the days of sickness amongst certain portions of the

population. The data, as he knew, were meagre enough, but they were sufficient to supply him with a text for an excellent discourse, in which the advice was tendered to extend the inquiry to all classes of the population for trying various problems.

If the sickness consequent upon different sets of circumstances were accurately recorded, the operation of causes which were not then detectable in single instances would be pointed out for removal. Let good returns be made showing the consequences of vicious habits and peculiarities. Let good returns be made showing the relationship of wages to sickness. Let good returns be made showing the relationship of prices of food to sickness. Let good returns be made showing any and every material change in any of the circumstances affecting great classes of workers. Let these returns be used, finally, as indices of the origins of sickness, and of mortality through sickness, and more could soon be done in the way of reformation with the old, and of prevention with the young, than the most inflammatory preaching that could be brought to bear on either old or young, since causes of evil would then be disclosed.

The comparatively small work done by the East India Company in this right direction was itself fruitful in no small degree. The Directors had proved that, owing to influences which they had brought to bear, and which had been suggested by collection of facts of prevention, they had secured from their working men, in London, returns as favourable to health as had been obtained from men living in rural districts. The success was due to the circumstance that the Company had learned how to

make the health. Selecting their workmen with care, at first, they made provision against sickness. They supplied medical attendance free of expense, so that the moment a man began to fail he could be certified from labour; and as in course of time each man by increasing age lost power to carry out the heavier work, except at a serious cost to his health and strength, they reduced his labour, and allowed it to be so changed as to become suitable, stage by stage, to his actual condition for labour.

This was a working lesson put forward as a useful lesson for all companies and all employers. It was the project of the model insurance that was wanted, and that is required up to this hour. It has been grossly neglected, and therefore we struggle yet with an immense load of unnecessary sickness and mortality. In point of fact, the lesson and the advice are nearly as urgent in 1886 as they were in 1828, and if I have repeated them very fully here it is to re-proclaim the national quality of the instruction —so simple, luminous, and foreseeing.

CHAPTER VII.

DIETARIES, SICKNESS, AND MORTALITIES.

INTO the essay treating on "Life Values" there is introduced, incidentally and by way of a footnote, a side essay springing from our author as a commissioner of inquiry into the administration of the poor laws. Something more will have to be told on this subject of poor-law work at a later stage, but here I stay to touch on the anticipatory footnote, because it it is strictly germane to the question of value of life under differing special conditions.

The author commences by restating the necessity for the collection, on the broadest scale, of accurate data bearing on causes of sickness and death. He had at various times come largely into contact, as a commissioner, with the representatives of medical science, and from this circumstance he had been led to the conclusion that medical inductions from the observation of individual cases of disease and mortality, or from the same number of cases of the same class, which usually lie within the range of the most eminent practitioners, afford scarcely any, or at best the most doubtful, results or indications of great principles of causation or prevention of disease,

the observations being too often complicated with objective and subjective personal idiosyncrasies.

"*It is only from the most extended collection of facts, in which the disturbing causes are merged in the most general effect, that the general principle can be displayed with the certainty requisite for safe action.*"

This was the principle set forth as to the collection of data relating to the medical investigation of causes of disease.

Within the last few years the full acceptance of this truth, long dwelling in the minds of observers since it was uttered, has been recognized in the organization called the Committee for the Collected Investigation of Disease. I dare say that the labours, so far, of that committee would not meet, entirely, with the approval of him who first suggested the idea. I can quite understand that he would say in regard to the inquiries of the committee, that they included too much of opinion and too little of evidence. But still it is a remarkable indication of progress that after a slumber of fifty years an idea, then well framed and defined, should spontaneously come into actual play, and be considered as the only certain highway to truth by a very large and influential medical community.

The suggestion, as originally conceived, was made, on the occasion of its inception, to apply to the question of dietaries in their bearings on health and vitality amongst various classes of the people, but especially the poorer classes. The first and most extraordinary fact which the author, by the application of his own method of research, brought out, was that in the days when he entered upon the investi-

gation our English agricultural labourers and artizans were much worse fed than paupers, prisoners, and convicts. At that period he found that while an agricultural labourer was obliged to do his daily work on one hundred and twenty-two ounces of solid food per week, and an artizan of the highest class on one hundred and forty ounces, a pauper had one hundred and fifty ounces, a soldier one hundred and sixty-eight, a prisoner in gaol two hundred and seventeen, a convict on board the hulks two hundred and thirty-nine, and a transported felon or convict three hundred and thirty.

The facts here stated were collected by direct inquiries made of agricultural labourers in various parts of the country; by detailed inquiries made of shopkeepers as to the quantities of provisions they were accustomed to sell to the families of independent labourers; and by official enquiries, as to the provisions actually provided for the pauper, prison, and convict communities by the authorities over them.

The dietaries of prisoners in gaols were prescribed with medical sanction in the same town and in the same county, and for similar classes of prisoners, and the general results as to quantities were as stated, the class being considered as a whole. When, however, the prison classes were divided into separate parts, according to the place in which they were confined, many discrepancies were detected. In some towns and in some counties the dietaries varied to the extent of one being double the amount of the other, the opinions of the prescribers being diverse, and formed on no solid ground that would render opinion anything more than mere floating observation, governed rather by individual caprice and sentiment than by

order of fact derived from extended knowledge and correct physiological exposition. The same peculiarity extended also, as the author found, even to the dietaries prescribed for the inmates of workhouses within the same districts.

The result of all this was that no system whatever prevailed in the matter of food supplies for the people, whether the people were independent, or whether they depended on authority for what they obtained. Those who were independent of all direct authority got the least, and got what they could, guided by their own instincts, their own necessities, their own habits, and their own education. Those who were under authority got, as a general rule, the most, but got it guided by the will, good, bad, or indifferent, of those over them. It was, and it is still, apparently, an incongruous system, resting no doubt on the necessities of existence, and perhaps never entirely remediable.

Our author, having for his primary duty, as a commissioner, to discover, and prove, and expose these incongruities, might have been quite content to have left off there. He would still have been a good and faithful commissioner, and it is not incredible that many in authority over him would have liked him so much the better if he had obliged them thus far and no farther.

Fortunately he saw another duty straight before him, and followed it out also; the duty, namely, of examining results as originating from the various methods which he had been obliged to record, results bearing on the vital values of the classes of people in whose persons the anomalies were so conspicuously indicated.

This duty consisted in making a comparison of the state of health of the different classes of men about whose peculiarities evidence of a trustworthy character had been collected. Did the comparative excess of food, provided for some of the classes, yield more work and better vitality than the comparative poverty of food which some of the other classes had to provide for themselves?

The paupers and prisoners were subjected to less labour than the agricultural labourers. Were they healthier?

The answer to these questions was first sought by a comparison instituted between agricultural labourers who were living by their own efforts and independently of parish relief, and those who were receiving parochial relief by residence in the workhouse. The comparison, though admittedly imperfect, owing to the difficulty of obtaining data absolutely reliable, showed, nevertheless, a decided balance of advantage towards the independent labourer, underfed though he was, when his diet was put side by side with that of his neighbour who lived in the much-abused workhouse. The governors of several of the workhouses where the high diet was allowed, reported to our commissioner that the change of diet on the first entrance of the poor into the house sometimes proved too much for them, and "carried them off."

The number of these statements was sufficient to prove that the heavier diets, however much they might be wished for by those who were struggling for an independent existence outside the house, were amongst the least healthy; but as no reliable account was ever kept of the sickness prevailing in the workhouses, the results were set aside in favour of others,

more exact in character, which were obtained from the prison records.

A general account of the existing sickness and mortality of every gaol throughout the country was sent annually to the Secretary of State for the Home Department in compliance with the regulations of the Gaol Act, then in force, and, in an improved form, still in force.

A cursory investigation of these important returns conveyed the singular truth that there were frequent instances in which an increase in the average amount of sickness bore a direct proportion to the amount of diet. Where the diet was increased in point of quantity on account of the prisoners being subjected to hard labour, there the sickness also increased.

These results led to a further and more detailed examination, and the preliminary series of facts are of themselves interesting as matters now of social history, irrespective of the lessons which our author drew from them, and which will be given in proper time.

The returns of gaols in the reign of William IV. in which reign the reference is made, were derived from one hundred and twenty-eight gaols and prisons in England and Wales. In those prisons for the three years, 1830-31-32, the total number of commitments averaged no fewer than ninety-seven thousand two hundred and seventy-nine.

The total number of persons in the gaols at any one time was about twenty-five thousand.

The average number of sick persons in the gaol each year was nine thousand and forty-four, or 9¼ per cent. on the whole number of commitments, namely ninety-seven thousand two hundred and seventy-nine.

The deaths each year averaged two hundred and forty-seven, or one in three hundred and ninety-four of the whole number of commitments.

The cost of maintaining the prisoners varied from one shilling and twopence to five shillings and even to seven shillings per head per week. The average was two shillings and sixpence per head per week.

Such were the general facts in these returns, but all of them were not thought to be satisfactory on the details of the diet question. Twenty-seven out of the hundred and twenty-eight returns were excluded, either because they were deficient in some parts, or because in the prisons from which they were issued money was paid to the prisoners instead of food.

The remaining one hundred and one returns were sufficiently complete to yield the information sought after, in a satisfactory form.

Out of these returns twenty were taken in which the expense and quantity of the diet was lowest; twenty in which both were highest; twenty in which both were intermediate.

In the first, or lowest diet series, the cost of each prisoner per week was one shilling and tenpence farthing, which afforded an amount of one hundred and eighty-eight ounces of solid food per week, or, within a tenth of twenty-seven ounces per day. Amongst the prisoners so fed, the percentage of sick per annum was three, and the mortality one in six hundred and twenty-two, or, as we should now estimate, 1·60 in the 1000, an excessively low mortality.

In the second, or highest diet series, the cost of each prisoner per week was three shillings and two-

pence, which gave an amount of two hundred and eighteen ounces of solid food, or a little over thirty-one ounces per day. Amongst the persons so fed, the percentage of sick per annum was twenty-three and a half, and the mortality one in two hundred and sixty-six.

In the third, or intermediate series, the cost of each prisoner was two shillings and fourpence half-penny per week, which afforded an amount of two hundred and thirteen ounces of solid food per week, or a little over thirty ounces per day. Amongst the prisoners so fed, the percentage of sick per annum was eighteen, and the mortality one in three hundred and twenty.

There remained still on the list of the one hundred and four complete returns forty-one which were not included in the above analyses. These were divided into two classes, twenty-one where the diets were of the lowest, twenty where the diets were of the highest cost. The districts in which the diets were of the lowest cost, and in which the food was cheapest and the diets largest in quantity, were rural. The districts in which the food was dearest were those in which the quantities were smallest. In the districts where the solid food supplied to the prisoners was of lowest cost but highest quantity, the cost per week of each prisoner was two shillings and fivepence; the quantity of solid food supplied two hundred and fifty-seven ounces per week, or nearly thirty-seven ounces per day. The sick, annually, were eleven and a half per cent. The mortality was one in two hundred and seventy-seven per annum.

In the districts where the solid food supplied to the prisoners was of highest cost but lowest quantity,

the cost per head was three shillings and a halfpenny per week; the quantity of food, two hundred and thirty-eight ounces, or thirty-four ounces per day. The number of sick, annually, was eleven and a half per cent. The mortality was one in three hundred and fifty-one per annum, or in the proportion of 2·85 in the 1000.

After commenting on the results thus obtained, various disturbing influences are studied, by and through which the inference as to the relationship of diet to sickness and mortality may be modified. The periods of long and short imprisonment were taken into the calculation. The effects of locality and of the size of the prisons were considered, with various other probable modifying circumstances. The final conclusion was that there was nothing in the circumstances of any of the prisoners to mark the predominant cause of increased or decreased sickness and mortality save and except the heavier and lighter dietaries. It was found in corroboration of this view that the sickness consequent on the change of diet took place at the commencement of the confinement, or within shorter periods than those during which the average of the prisoners remained in the gaols where the sickness and mortality were greatest. It was shown also that the health of the prisoners was, proportionately, good in those gaols where the average periods of confinement were long and the diet low. It was further shown that when intermediate diets were compared with higher diets, in prisons where the periods of detention were the same, the rule held good that the sickness and the mortality were still less where the diet was lowest. Lastly, it was indicated that in some prisons where the diet had been

reduced, sickness had in no instance been increased, but, as a general fact, diminished.

Still, connected with the effects of the higher and the lower dietaries on the sickness and mortality of inmates of prisons, a curious reference is made to qualities of diet, which the rapidly rising vegetarian school of to-day might utilize to some purpose. Our author detected that prisoners on entering gaol were injuriously affected by the "meat"; that is to say, the animal food with which they were regaled. In the higher class of dietaries, where the proportion of animal food was diminished and the vegetable food increased, there the amount of sickness was reduced.

Another very interesting fact in connection with this part of the essay on the value of life is the mention, for the first time, of the name of one with whom our author was for fifty years afterwards associated in science, and who, then little known, became the leading vital statistician of the century, Dr. William Farr.

Farr, then plain Mr. W. Farr, "surgeon and medical statist," took charge of these facts about prison dietaries for our author, and continued them for him in a different form, by introducing his then new method, afterwards to become so familiar, of bringing the numbers of the population reported upon to the mean of one hundred, and drawing the conclusions from that standard. Under this plan Farr took sixty of the prisons and divided them into three equal classes, one provided with a high, a second with a low, and a third with an intermediate diet.

In the gaols of lowest dietaries the annual attacks of sickness, in the mean population, were one hundred and forty. In the gaols where the highest diet

prevailed, the annual attacks of sickness were one hundred and twelve. In the gaols where the intermediate diet was used the annual attacks of sickness were ninety-three.

The calculations were based on returns made upon two hundred and sixty-seven thousand eight hundred and seventy-one prisoners during one year, representing at the time of the return thirty-five thousand five hundred and three persons then in gaol; twenty-six thousand six hundred and fourteen attacks of sickness; five hundred and forty-three deaths; forty-eight days of detention; and seventy-five per cent. of annual attacks of sickness.

The rate of mortality followed the rate of sickness. In the class with the lowest diets it was at the rate of 1·48 in the 1000. In the class with the highest it was at the rate of 3·44 in the 1000. In the intermediate class it was at the rate of 2·93 in the 1000.

The reforms suggested from the evidence collected were on this occasion, as might naturally be expected, as distinctive as they were just. The highest average of food which the agricultural labourers could claim was one hundred ounces of solid food per head per week. The prisoners had allowed to them fifty ounces more. Twenty-five thousand thieves or other prisoners consumed in a year one thousand eight hundred tons more of food than the same number of labourers consumed, and the excess to the former would have sustained eight thousand three hundred labourers for a year. It was a rank injustice to the labouring population. It was unjust to the public. For if the whole of the prisoners in England had been placed on the moderate and healthy diets used in the large prisons of Manchester and

Coventry, the saving in money from the public purse would have been eighty-one thousand two hundred and fifty pounds sterling.

It was unjust to the prisoners themselves, for upon them it entailed sickness and mortality largely above what was avoidable, and that often in the case of prisoners who were confined for brief terms and slight offences. Thus the average excess of sickness, which was the concomitant of the excessive forms of dietary, amounted to no fewer than five thousand eight hundred and eighty-two cases per annum, yielding an unnecessary mortality of ninety-four. The prisoners were, in fact, "subjected to a forced lottery, in which twenty-three lots out of every hundred received a fit of sickness, and one out of every two hundred and sixty-six received a fatal ticket—a sentence of death."

It was unjust to morals. It was not natural to suppose that in districts where the prison fare was better than that with which the agricultural labourer was content, there would be any inducement to discharged prisoners to remain free of crime on regaining liberty. It was natural to expect it the other way, and it was the other way. In ten prisons where the cost of maintenance averaged three shillings and sevenpence a week, the re-commitments were six and a half per cent. yearly. In the prisons where the cost was one shilling and eightpence halfpenny a week, the re-commitments were four and a half yearly.

It would seem to us in these days that the position of the author of the inference thus submitted was unassailable and required no apology. It was really otherwise. In those days of less refinement

and of much more brutal nature, there reigned an unintellectual sentimentality which stood in the way of all such reformers as our friend was and is. He had, consequently, to resort to an apologetical style as he closed his argument. He reasoned that had the average of sickness and mortality from a reduced scale of diet been greater rather than less, instead of the reverse, the reduced diet, brought to at least labourer's fare, ought to have been enforced. Those good people "whose hearts are larger than their heads,"—a very striking physiological comparison by the way,—under the disastrously ambiguous word *poor*, would confound the independent labourer with the pauper and the prisoner; and those who would profit by profession and misrepresentation would be found to receive the suggestion for a better administration as a suggestion for a reduction of the diet of the labouring classes generally, while in strict truth a proper administration would only have affected the comforts of the labouring classes by augmenting those comforts. The independent labourers, to whom the degrading appellation of *poor men* was applied by their intended friends but real enemies, were as much entitled to the widest range of comforts which their means would enable them to maintain as the rich. But it could be reconciled with no sound principle of administration that paupers and prisoners should enjoy heavy dietaries with animal food, whilst to a large proportion of the poor of the United Kingdom even bread was a luxury; nor that prisoners should have white bread while soldiers were made to accept brown.

Much opposition was excited by these plain-spoken words, and long did the opposition last in the case

of prisoners at least. As late as 1858 transported convicts were so richly supplied with solid food that Dr. Rennie, of Fort Freemantle, Western Australia, was compelled to report on the diseases induced by the excess of food, and in reference to his report I was led in 1856 to publish an essay—I believe the last on the subject—on "Diseases of over-fed convicts." But slowly as the lesson was received, it was, in time, admitted, with the ultimate effect of adding largely to that conspicuous healthiness of the prison population which is now so well known, and is so often a matter of wondering comment.

CHAPTER VIII.

REGISTRATIONS OF BIRTHS, MARRIAGES, AND DEATHS.

THE last subject included in the essay on Life Values was connected with endowments, and introduced births, marriages, and deaths, as subjects for calculation. In this part tables of monetary calculations were not discussed, but the more primitive and fundamental questions—namely, the prolificacy of marriage and the mortality to which the children of married people are subjected in relation to rules for endowment and provision.

The report of a commission, from which our author derived the chief material for his present argument, contained the evidence of one scientific medical witness whose observation was worthy of very serious consideration. This witness was Dr. Granville, a physician and accoucheur of singular acuteness of observation and of sterling industry.

Granville lived until quite late years, and I remember him during his old age. He, like Andral, a great French, and Blundell, a great English physician of our times, may be said to have outlived himself, for he was able to exist after he was unable to proclaim his existence by his activity. He remained, nevertheless, always an accomplished scholar, and those of his senior cotemporaries

whom I knew, Dr. Robert Willis, Sir W. Fergusson, and Sir T. Watson, not to name our present author and others still living, invariably spoke of him as a man whose abilities reached all but to genius. It is just to name these facts in reference to the one witness on marriage, who appeared before the parliamentary commission, to whom our author has paid a tribute of acknowledgment, because the evidence which he gave, as well as the deductions which were drawn from it, are original, for their time, and are still instructive.

In the various institutions with which he was officially connected, Granville gathered up a grand total of twenty-four thousand five hundred and fifty cases for observation, from which he ascertained the earliest ages at which women of the poorer classes married; the number of children they produced in a given period; how many of these children might be expected to die within a given period; of what diseases those children died; at what period of life married women among the labouring classes were most prolific; at what time they ceased to bear children; what was the influence of the occupation of the parents upon the health of the offspring; what was the effect of locality; and a number of other similar but minor questions.

The results of these investigations, which, as our author ventures to remark, "ought to be studied by spinsters," were extremely novel and important at the moment when they appeared. They showed that amongst the lower middle class as many as one hundred and five, or one-fifth, of the women whose histories were inquired into were married under the age of nineteen, one-sixteenth after twenty-eight,

and only one-thirtieth after thirty. They showed that the average of births from these marriages was four-and-a-half to each, in all three thousand nine hundred and sixty-six children born, of whom one thousand six hundred and seventy-five survived. They showed that during the whole of the time that these women were bearing children they each produced about two children in four years.

The results of the research were, moreover, peculiar in elucidating the law of prolificacy in relation to the ages of child-bearing women. It was found that if a woman marries at twenty-one or twenty-two, and for fifteen years following is placed under similar circumstances to a woman marrying at fourteen, fifteen, and sixteen, she, the older woman, will produce the same number of children as the younger; because those who marry very young either cease sooner or go a greater number of years without children. When the younger married woman arrives at from twenty to twenty-five years of age she will stop till about thirty, and then begin again; while the woman who is married about twenty, and begins to have children quickly afterwards, will go on regularly bearing children, unless disease steps in, every two years, if she do not suckle every year, until she arrives at forty or forty-two years of age, which is the usual period at which child-bearing ceases.

Other facts of a similar kind were collected, by which it was shown that the above-named conclusions were essentially correct, the whole leading up to the consideration and condemnation of a scheme which had been proposed for inducing unmarried men to pay a certain sum annually, on the condition that

every child resulting from any marriage subsequently contracted should, when it came of age, be entitled to a certain sum, or to a certain annuity.

The most useful portion of this section of our author's essay, that which showed most prescience, was held to the last, and was anticipatory of the great event which occurred in 1838 in the working of the Act for the registration of births, deaths, and marriages, under a distinct department, and under the direction of a Registrar-General. At the time when the essay we are describing was written, the discussion was warm on the subject of the mode of carrying out the work of the new office. The idea of a purely "civil" registration was condemned by many with as much fervour as secular education or purely civil marriage has since been. The representatives of the dissenting bodies, and of the then "High Church party," assumed that the business of collecting certain of the facts was exclusively their business and was involved in their respective connexions, as if religious ceremonies as essentials of contracts or as the foundations of civil rights could not be kept distinct from the business of registration.

Against such a view our author first protests, and then proceeds to point out what should be the work of the Registrar-General, and what were the objects to be attained in his department so soon as it was established, objects up to that time either ignored or overlooked by all parties. These objects were—

(*a*) "The registration of the causes of disease, with a view to devising remedies or means of prevention.

(*b*) "The determination of the salubrity of places in different situations, with a view to individual settlements and public establishments.

(*c*) "The determination of comparative degrees of salubrity, as between occupation itself and occupation in places differently circumstanced, in order that persons willing to engage in insalubrious occupations may be the more effectually enabled to obtain adequate provision for their loss of health.

(*d*) "The collection of data for calculating the rate of mortality, and giving safety to the immense mass of property insured, so as to enable every one to employ his money to the best advantage for his own behalf, or for the benefit of persons dear to him; and that without the impression of loss to any one else.

(*e*) "The obtainment of a means of ascertaining the progress of population at different periods, and under differing circumstances.

(*f*) "The direction of the mind of the Government and of the people to the extent and effects of calamities and casualties; the prevention of undue interments; concealed murder; and deaths from culpable heedlessness or negligence."

As we look back from our present standpoint on the returns of the Registrar-General, we cannot fail to discern that almost all that is best in them is what is suggested under the heads above given. Seeing this, we cannot fail, at the same time, to regret that many of the most telling and useful of the projects suggested have either been left out, or have been supplied in so indirect a manner as to be far from satisfactory or complete. The questions relating to causes of diseases, to occupations and disease, to locality and disease, are amongst those most requiring still to be more fully elaborated, in order that the official returns, valuable as they have become, may reach their full value.

One thing more. Our author, reading clearly the mode of obtaining the best information from the best sources, hit the nail on the head, in this early production, in urging that certificates of the causes of death, if they were to be of any real value, must not be merely hunted up by local registrars, but must be recorded by the members of the profession of medicine who have directly observed the action of the causes, in strictly professional form, and with a small but definite remuneration for a distinctive and valuable service, as value received. "The parties thus preparing the certificates would be principal witnesses in the nearest degree, cognizant of the facts." Their labours faithfully and carefully carried out would be the best records of facts in relation to all diseases affecting the community, and the mortality consequent thereupon. It is forty-eight years since the first certificates of death were sent forth, and all through that long time the inadequacy of those certificates as full and complete records of the life and death of the nation has been sustained, simply because the common sense and common honesty of the plan here proposed, of fair payment for service rendered, has been denied.

CONCLUSION.

The chapter on these topics of births, marriages, and deaths was a fitting conclusion to the essay on the Value of Life, a maiden essay to a long series of after works, to many of which it, in some degree, forms a part.

The thoughts embodied are the first of an earnest and, as yet, youthful mind; crude, but rich; studied, but uncontaminated by over study; critical,

but open to criticism; speculative and condemnatory of practice, but consistently, and, as after events have proved, eminently practical.

Thus constituted, these thoughts were not likely to be immediately popular. The bold and uncompromising principles which they inaugurated, were not directly effective in their influence either on the practical or the legislative mind. What they were effective in doing was, however, in the end, perhaps the most important of all doings. They led a few advanced, able, and far-seeing men to think with new thoughts on the great problems of health, disease, mortality. They introduced a new order of service into the public service. They taught leading men who were not practical,—if we like to compliment them by saying so,—to discover what principles of improvements were really wanted; and they called upon smaller men to supply the details. In time both were influenced. The leading men found, in the pursuits suggested, wide scope for their powers; while the smaller men, seeing a demand for services which were remunerative as well as useful, fell into the pursuit in unexpected numbers.

So Sanitation, the once despised, as a political and economical department, grew and flourished, until it became, as we see it in these days, a science, a hobby, and a trade.

CHAPTER IX.

TAXES ON KNOWLEDGE.

ANOTHER of our author's social efforts had relation to the subject of taxes on knowledge. He had come to the conclusion, as early as the year 1827, that for the prevention of crime it was necessary that knowledge should be free, and from the commencement of his career this has been a leading principle in his work.

In 1830 there was in progress an active crusade against taxes on knowledge. All the advanced and liberal scholars of the day were joining or had joined in that crusade. The London Literary and Scientific Institution had been the platform, on April 20th, of a meeting, presided over by the late Dr. Southwood Smith, at which meeting admirable speeches had been made by the Chairman, by Mr. J. H. Elliott, Mr. W. E. Hickson, Mr. Knapp, the late Mr. W. Coulson,—the well-known surgeon and some years afterwards President of the Medical Society of London,—and many other advanced thinkers on the subject.

At this meeting Dr. Southwood Smith's speech was very telling, as also was that by Mr. Hickson, afterwards proprietor and editor of the *Westminster Review*. The addresses of these gentlemen were

addresses of enthusiasm, splendidly fitted for the purpose they had in view, that of arousing the people to the sense of the great wrong which was being done by the legislature, but requiring to be sustained by ingenious, and at the same time logical, argument. The requirement was met by the essay on the "Taxes on Knowledge," now before us. The essay was published in the *Westminster Review* for July, 1831, and was afterwards republished and sold in a separate form.

The article was based on three essays: 1. "The Moral and Political Evils of the Taxes on Knowledge," expounded in the speeches delivered at the City of London Literary and Scientific Institution, on the subject of a petition to Parliament against the continuance of the stamp duty on newspapers, the duties on advertisements, and on printing-paper. 2. "A Letter to a Minister of State respecting the Taxes on Knowledge." 3. "The Real Incendiaries and Promoters of Crime" (from the *Examiner* of February 20th, 1831).

The author set out in this *Review* by the statement of a question.

In what country could any Government have enforced a law by which it was enacted "that no man should be permitted to relate anything to his neighbour for the purpose of instructing or amusing him; informing him of the laws which he is bound to obey, and of the conduct of the agents by whom those laws are made, unless he, the relator, give heavy securities that he will answer for any libels he may utter; for anything which anybody, at any time, may be pleased to dislike for any reason, and for anything which may tend to bring any agent into hatred and contempt, however un-

trustworthy, however consummate a scoundrel such an agent may be?"

This question put, the effect of communicating information by speech was compared with the effect of making the same communication by the pen and the press. It was urged that the most ignorant of the community would perceive and revolt from the moral and political evils due to any obstruction to communication of information by means of speech equivalent to the evils which were due to the actual obstruction imposed upon communications by means of print. In other words, it was argued that if the same obstructions were put in the way of the sense of hearing information, as was then put in the way of the sense of seeing it, the most uninformed persons would detect the folly, and do their best to get it rectified.

But by concealing the Government behind the vendor or agent for the distribution of the printed communication, and by disguising the tax under an extra charge for the commodity, the people were blinded to the mischievous operation of the impost of a tax on knowledge.

In a few sentences these now self-obvious, but, in 1831, unrecognised truths, were thus put prominently forward with singular effectiveness. They were supplemented by another argument, which was not less palpable and convincing.

It was urged by those who supported the taxes on written communications, that printed communications were more widely disseminated than were spoken ones. This it was admitted was correct; but the communication being written and printed was thereby made more exact, more fixed, and, as a consequence,

more secure against falsehood. Thus by the printed rather than the spoken word, there was wider diffusion of more responsible, and more trustworthy, and more correct information, for which reasons there was less need for its taxation.

In illustration of the line of argument here pursued the political narrative or history was, for a moment, thrown aside, in order to teach what was meant, by a purely social example. From time immemorial the town-crier was the medium for offering advertisement of anything that might be going on in a community, and which required to be communicated from one or more to many. Suppose, then, that this functionary were employed to call attention to a calamity, and solicit the assistance of the charitable; or suppose he were employed by a distracted mother to explain to the people that she had lost a child. Suppose he had assembled the people together, and while in the act of announcing to them what he is told to announce, an officer stepped in and interrupted the proceeding by saying, "at the peril of a suit in the Exchequer, and a fine of not less than twenty pounds, I command you, in the king's name, to stay until you have paid me three and sixpence," as his advertisement duty:—"suppose," says our author, "this occurred, the proceeding would be so monstrous that the officer would have little chance of escape from the just anger of the people."

Innumerable extortions of this nature were, nevertheless, incident to the taxes on printed advertisements. Several thousands of pounds were unavoidably spent in advertising the first subscriptions for the relief of the sufferers by famine in Ireland. By the same extortion a grievous amount of the money sub-

scribed for the relief of the sufferers by the floods in Morayshire was lost. The whole system, in a word, was laid and raised in error.

The inconsistency was further illustrated by reference to the exhibition by tradesmen of their goods in their shops and windows. These displays were advertisements in the strictest sense of the word, but they were not subject to taxation.

A general note was then made on the taxes as obstacles. They were viewed as obstacles to interchange, to production, to literature, and to the liberal arts. In some instances they operated as taxes on calamity, in other instances they intercepted relief from those who would give relief were need made known to them; in some instances they prohibited the use of the means of obtaining relief. The genuine designation of the whole was true,—they were taxes on knowledge.

From the statement of these arguments the author proceeds to the statement of details bearing upon the injurious effects of these imposts. To the mind of the present generation, in which those imposts are dead things of the dead past, it must be as curious as interesting to read what had to be said in order to get liberation from the imposts, while it is matter of much historical value to learn what was the position of the sources of knowledge when the imposts upon them were in full force. Here are a few of the details which the author brought specially under notice.

The public journals were so dear that the habitual use of them was impossible by a large proportion of the middle classes, and by almost the whole of the labouring classes of the community.

The field for the circulation of the public journals was so restricted that it was almost impracticable to obtain remuneration for any journal of original information unless it had a considerable sale. There was room, therefore, in the metropolis for a few large journals, by which a quasi monopoly was created.

Thus, in 1826, the number of sheets of newspapers stamped for circulation were :—

In England	25,684,003
,, Ireland	3,473,014
,, Scotland	1,296,519
	30,453,536

At the time named, the population was a little over twenty-one millions, so that had the newspapers been given out equally there would have been one and a half sheet per annum to each individual, or taking one-fourth of the nation as capable of reading, habitually, six sheets annually for each individual. But of the total number of papers printed annually, thirteen to fourteen millions were daily papers published in the metropolis. These were sold in quantities of three hundred sheets to one individual, or to a small number of individuals. The remainder which circulated through the country consisted chiefly of weekly papers, fifty-two of which were sold for the use of one individual, or for a small number of individuals; and when the number of stamps which must be consumed for papers published twice or three times a week is considered, the field which the papers pervaded must have been miserably contracted.

Thus, as it was ably set forth, physical wants were satisfied, physical gratifications were gratified before ever the intellectual wants were thought of.

The price of a newspaper, sevenpence, would buy a labouring man his dinner; the annual subscription to a daily paper would purchase a suit of clothes for a person of high rank, or pay the wages of a servant, or meet twice over the annual subscription for admission to a club-house equal to most palaces of European sovereigns.

From the question of obstacles due to cost the author passed to cost of what may be called bad effect of the prohibition. With keen insight he drew attention to the danger of keeping the manufacturing populations in the blindness of ignorance. The most ignorant of the workmen were not only the most dangerous, but were becoming the most unprofitable. It was much better to conduct and settle disputes by means of writing or print than by breaking machines and burning of factories on one side, or by rounds of musketry and shedding of blood on the other.

The same argument was applied to the agricultural classes, and evidence of a telling character was adduced in support of it. In the winter preceding the publication of the essay now under notice, there had been serious disturbances in the agricultural districts. At the commencement of those disturbances, addresses and proclamations were distributed, exhortations were published, and penalties of the law stated in the newspapers. But the newspapers were entirely beyond reach, even of those members of the labouring population who were able to read, and they were all then in too great a state of excitement to listen to any separate addresses, and too mistrustful to pay attention to them. So, week after week, whole parishes of labourers went on daily

committing capital offences, while never suspecting that they had rendered themselves liable to heavier penalties than fine and imprisonment. They were only undeceived when they saw the work of the executioner. With the exception of those guilty of arson, the majority of culprits were punished for their ignorance, which ignorance was the result of misgovernment.

The argument was pushed still further by a comparison of the minds of the educated with those of the uneducated, an argument which, even in this day, is not without its value. The educated person cannot, it is reasoned, enter into the mind of the uneducated; he cannot study the language by which the man who remains uneducated can be made to understand what is desired to be conveyed in the way of instruction. The labour required in writing to the illiterate, so as to be understood by them, is so great that very few can form any comprehension respecting it.

From this fact, it was made clear that the only mode of sound progress must be to educate the illiterate until they could understand the literate, whereupon all the work of education would become as easy as could be expected or desired. In no other way than by the reports of judicial proceedings published in the newspapers could the public derive any notion of the laws they were bound to obey. The argument thus stated was supported by a quotation from the great jurist Bentham.

"By publicity the temple of justice adds to its other functions that of a school of the highest order, where the most impressive branches of morality are taught by the most impressive means;

a theatre in which the sports of the imagination give place to the more interesting exhibitions of real life. Sent thither by the self-regarding motive of curiosity, men imbibe without intending it, and without being aware of it, a disposition to be influenced more or less by the social and tutelary motive, the love of justice. Without effort on their own parts, without effort and without merit on the part of their respective Governments, they learn the chief part of what they are permitted to learn of the state of the laws on which their fate depends."

The opinion of the great jurist Bentham was supported by an exposition of the advantages of publicity for preventing the simply ignorant from being misled by the pretensions of their own class.

Discussion as to the merit of action is fatal to implicit unity of action and to habit of blind obedience, is an idea which is meant as a death-blow to the Mandeville sentiment, "if a horse knew as much as a man I should not like to be his rider." The sentiment was held to be as false as it was base. If a farmer's horse did not often know much more than his master when bearing that master home fuddled from market on a dark night, there were not a district in the country which would not weekly hear of some one of that valuable class of men having been found defunct in a ditch, pool or fen. In the metropolis, we have, almost daily, some fatal illustration that a little knowledge is indeed a dangerous thing, but the possession of more would have conduced to the safety both of the horse and its superior, and have saved the impulse by which both are dashed to pieces.

The Mandevillians, it was contended, have brutalized millions, and have brought them to a state in which they are ready to rush on to the injury of themselves and the destruction of all around them.

The demand for political information by the masses was next insisted on. Circumstances created a demand for political information, and had ensured a supply. The taxes on knowledge acted as a smuggler's premium; they ensured the circulation of a commodity which the advocates for such taxes would deem the worst; while they excluded from competition the journals which were under the heaviest securities against extravagance, and which presented the greatest extent and variety of the particular facts from which sound general rules of action may be deduced and receive their illustration. If the man of one book is to be avoided, how much more the politician with one remedy, one universal nostrum!

Some criticisms followed upon the evils resulting from the restrictions of the Post Office regulations on the circulation of newspapers in the colonies, and the "Yahoo" legislation of the "late" Government. It was shown that no captain was permitted to deliver a colonial journal to any person on his arrival in England, but was bound to put it into the post office in order that a tax might be imposed upon it, in the shape of a postal charge, for a service that was not wanted.

The effect of the "fiscal rapacity" was further illustrated by the regulations respecting the transmission of the English journals to France. The clerks of the Foreign Office charged £3 6*s*. 3*d*. for forwarding a daily paper to France. A proportionate sum was

required for forwarding weekly publications. The paper to be sent had to be purchased by the Post Office clerk, so that a person could not, if he would, have the use of a paper and then forward it to a friend abroad; neither could he send it abroad in exchange for a foreign paper. The exaction defeated its own object, which was to obtain the greatest amount of money, since the impost amounted to a prohibition of the circulation of English newspapers abroad. During the year 1829 the newspapers sent beyond the seas by the officers of the foreign Post Office were: morning papers, 153; evening papers, 163; three-days-a-week papers, 130; weekly papers, 113; in all, 559.

A short but clear exposition of the natural advantages which would be gained by international freedom of communication of ideas and sentiments through the press closes this portion of the review, and, now that almost all that is there contended for has been fulfilled, reads with prophetic accuracy. Whatever is promised by the author as the reward "of a system of reciprocity in the post," has come about precisely to the extent to which the system of reciprocity has been carried out. "National prejudices and antipathies" have been "softened down," and a feeling of honourable emulation and sympathy between country and country "has taken place."

CHAPTER X.

TAXES ON KNOWLEDGE (CONTINUED).—PRIVILEGED REPORTING AND JOURNALISTIC INFLUENCE.

THE subject was next pursued in reference to reporting, and to the special service or art of the reporter of public proceedings and debates. Reporting is a system of abridgment, requiring for its best performance, labour, superior talent, and integrity. The speech of one hour delivered by a fluent speaker will fill from four to five columns, or the whole page, of a full-sized daily newspaper. A paper like the *Times* (even in those days of fifty years ago) might contain as much print as a book of Thucydides, or one volume of Sir Walter Scott's novels. To report every word of a speech, as some ignorant persons require, would be to destroy the utility of the debates; for how could people read them, even if they were as instructive as Thucydides or as amusing as Sir Walter. Mediocre speeches generally gain rather than lose by the reports in the daily papers; and the public have not unfrequently suffered by the reporters' plan of dressing up jackasses, as an exercise of skill, to impose them on the world as creatures of a superior order. They have also been charged with offences of an opposite description. They sometimes abridge what they hear in the same way as Procrustes abridged

his victims to make them fit his bed. They place the heads and shoulders of a Colossus on the trunk or legs of a pigmy; they heighten beauty, and aggravate or conceal deformity, as favour or aversion to subjects or persons may direct. The effect of the monopoly created by the taxes was to give immense power to the daily press in directing, with greater or lesser force, the public attention to particular subjects, either by reporting these at disproportionate length, or by suppressing them altogether. Hence there is established a fourth estate in the constitution, and the Acts of the Parliament ought to be recorded as passed by "the King, Lords, Commons, and Reporters in Parliament assembled."

That the effect of the abolition of the taxes on knowledge has been to the good end that was here pointed out, is singularly proved by that which has taken place since the period of the abolition. There cannot be two opinions now amongst those who remember what reporting was compared with what it is, that the greatest improvement, both as to composition and to tone, has taken place in our days. We enjoy at this time a clearness and fairness of reporting which is calculated in the surest way to bring out the good and useful speeches, and to leave out the bad and useless. Competition in reporting is so free in our days, in fact, that every man who has anything to say worth saying is quite sure of a report from some one organ of public opinion; and so determined is the public to have every man fairly reported, that any serious error, intentional or accidental, on the part of the reporter, is certain to injure no one so much as the reporter himself. In this change we have two advantages secured for us; the monopoly

of power is taken from a rich and exclusive press, and the reward of all really good work is made known to every class of the people. The speaker is dealt with fairly, the public is dealt with liberally, and the press is honoured without being feared.

At the time when the essay which is now under hand was composed, the monopoly of the exclusive press was indeed becoming more than a power; it was becoming a power which was dangerous as well as commanding. An illustration of the truth here named is shown in a forcible manner by the evidence the essay gives of the influence of the fourth estate on the Catholic question, just then settled and put aside as one of the burning subjects of the time, happily at last at rest. To us who had no share in that great settlement, the evidence of one who had a share, and who was present all the time when the Act of Relief was passed, is of general value, but on one specific point it is of special value. The merit of having carried the Catholic question was commonly ascribed to the Duke of Wellington, but if the authority we are following is to be accredited—and surely no better authority could be given us—the Duke was on that occasion a mere agent acting under paramount influence. That paramount influence was the fourth estate; and to the fourth estate is due the glory of having carried that measure so many years before the majority of the lower, and even perhaps of the middle, classes of England were prepared for it. How this was so is stated in the following explanation.

The greater number of the reporters of the public press in those days were Irish law students, who were obliged to come to London to keep their

terms; or they were Irish barristers, who had not succeeded in obtaining practice. The circumstances which gave to these gentlemen a majority on the reporting staff of the papers were partly their greater aptitude for debate and declamation, partly the fact that theirs was the most available talent in the market. They held the prominent place as reporters from some such causes as those by which the Welsh then occupied the business of supplying milk, and the Scotch of supplying butter to the metropolis. Whenever, therefore, the Catholic question was brought forward, these Irish reporters worked with redoubled zeal; and morning after morning the papers appeared full of the debate. Every speaker had all the aid that zeal and ability could give him. Volunteer patriots were sure to be repaid with the display which forms part of the existence of orators. Hence members of the Legislature, judging from the space which the subject always occupied in the daily papers, found an exaggerated estimate of the strength of public opinion on the question, while the attention and zeal, thus stimulated, reacted upon the public, and especially upon the reformers. Ultimately the public opinion upon the subject gradually acquired strength; but, in truth, it was at all times overestimated. In the city, the people took but little interest in the question until the later debates, when it was the defeat of the High Church party, rather than the question itself, which occasioned the excitement among the majority of the community.

Had the matter been in the hands of the English reporters exclusively, they probably would have cared no more about it than about any question

which related to the eligibility of Bramah or Vishnu to hold office in India, or have taken a deeper interest in it than the Irish reporters themselves would have taken in any question relating to the spiritual scruples of the members of the Kirk of Scotland. It was, however, we are told, perhaps "all for the best," and it was extremely edifying to observe into what hands the High Church party had, by their measures against the press, placed irresponsible power, and the way in which their sin against the truth was visited upon themselves.

Such is one example of the power which an exclusive agency can wield over the destiny of a nation, and surely a more forcible argument was never adduced in support of the abolition of the taxes on knowledge. Assuming that the argument was a little overstated, and that all reference to the editors of the daily papers was shrewdly left out, it was one of those convincing statements which, more than any other, influence, by their persuasive intricacy, the half-read legislator. There was, moreover, something more said about the natural history of the reporter, fifty years ago, which bears reproduction.

Before the time when the essay against the taxes on knowledge was written, Parliament was under the control of the public press far beyond what any one in this day can understand from the present practice. One or two great questions were laboriously reported, but on all others both Houses were dealt with in the most summary manner. At ten or eleven o'clock, on the motion being put and seconded, the reporters adjourned. The reporters of the Lords went to discuss a bottle at the "Star and Garter;" the reporters of the Com-

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mons went for the same purpose to the "Ship." Whether Burke or Fox spoke afterwards mattered not; all that the public was permitted to know was that "the House sat until late!" It was a rule that the public should not be troubled with any debate while the House sat in committee, and while the House was thus occupied, the reporters often sat in committee over a bowl of punch, leaving one of their number as a scout to watch the House. If the House thought proper to resume, the reporters might; but it was by no means certain that they would, and if they would not, the rest of the doings of the House were silent to the public ear.

The tyranny of the reporters extended from the House at large to the individual members of which it was composed. Poor Mr. Windham, who had said something rather intemperate, was condemned to obscurity, and during one whole session, when his talents shone with their greatest brilliancy, had his speeches suppressed, an annoyance which preyed upon his mind, and probably accelerated his death. Old Mr. Jolliffe, a country member, was wont for a time to go into the reporters' room as a lounge, and say, "Are there any gentlemen of the press who want franks?" A gentleman of that kind was then sure to have as many franks as he liked. But afterwards, when this civility was forgotten, the member, Mr. Jolliffe, was forgotten also, and would whimper for a notice: "Now, my good fellows, don't cut it short, give us a decent speech. Remember, I am a country member, and people think what I say of consequence, and you know I am a friend of the press."

In self-defence the reporters adopted an order that they would write no report on Wednesday nights. In 1830 one of the most brilliant debates was suppressed because it took place on Wednesday. The speeches of Wednesday were "burked," and so Wednesday became an "off night." The state of affairs in 1830 was, it will be seen, sufficiently alarming, and while the taxes on knowledge lasted, the difficulty of reform was insurmountable. It was suggested that each House should have its own reporter as a sworn servant, and should publish reports of its own proceedings; and it was suggested in the essay before us that security might perhaps be found, as was found in the Spanish Cortes by their *Comité de redaccion*, by recording the speeches of members in all their integrity. But after all, so ran the argument, the most obvious and most efficient remedy would be the removal of the taxes on knowledge, and the consequent powerful competition of reporters and reports.

At the moment one or two journals led the rest, the smaller journals being too weak to compete with the larger. With free competition, no one journal could garble or suppress any matter of importance which another would not find it in its interest to publish.

The subject argued so far, another view was presented bearing upon the imperfect representation of the true opinions of the people on great national questions, by the exclusive journals. The exclusive journals were given to represent the sentiments of the people when they happened to be warmly expressed, but not the staid opinions of the people. The *Times* in those days was considered to be a

journal which sought to discover the course of public sentiment, and to follow it. Thereby the *Times* often misled its readers at home and abroad. The public will on the subject of reform was much too strongly expressed to admit of being misrepresented; but on the question of the ballot it assumed to be a subordinate question, on which no favourable opinion was entertained, and on this, therefore, the paper commented "in its own blundering way." The proposition was scouted, and its advocates were assailed vehemently until the ballot began to be discussed in public meetings; and when it was evident that the great body of the people was in its favour, the journal began to be more moderate in its tone. In respect to the difficulties then going on about Belgium, the same line of conduct was traced.

The effect of the exclusion was considered as something unfair to the people as readers. The people took the exclusive journals, like the *Times*, for the news they contained, while they might detest their principles. They were in the condition of travellers, who are compelled to submit to insolence and extortion because there is no adequate competition.

The effect of the exclusive plan was next traced in regard to the matters published in the exclusive journals. A large portion of the public press was made up of literary plunder, and the profits of the piracies, considered as so much taken from the journal of original information, created a proportional reduction of the price paid for news. The piracy was an invasion of small rights, and "until small rights be protected, great ones will not be secure." The invasion in this case was so bad that a daily journal, which had any exclusive intelli-

gence, was often obliged to wait until another was published, in order that the other should not instantly pillage the information. Thus one journal fenced with another at an extreme cost,—an evil which could only be removed by the unrestricted and fair competition that would be sure to follow the removal of taxation on knowledge.

CHAPTER XI.

TAXES ON KNOWLEDGE (CONTINUED).—PROPOSED REFORMS.

AFTER stating the objections to the system of taxation, the reader was next presented with a code of proposed reforms in the system of circulating the public journals. The points urged in this code may be summed up under the following heads:—

1. That the Government should take away altogether the stamp duty on newspapers.

2. That newspapers, books, and all printed communications should be conveyed by the post, and that a revenue not less than the then existing stamp duty would thereby be obtained by the Government.

3. That printed papers not exceeding four or six ounces should be permitted to be sent by the general post. That a sheet of demy of the ordinary or full-sized paper,—viz., a sheet of the size of the daily newspaper,—should be conveyed for one halfpenny postage, and that a sheet of the size of the daily newspapers should be conveyed for one penny to any part of the United Kingdom.

By this plan it was contended that not only newspapers, but pamphlets, essays, prospectuses, price currents, reviews, magazines, and almost every description of literature, would be sent by post.

Such were the outlines of the plan proposed. They had received generally the sanction of a great public meeting of friends of the Diffusion of Useful Knowledge, held some five months previously at the London Literary and Scientific Institution, under the presidency of Dr. Birkbeck. The resolutions passed at that meeting were practically the same as the three heads which have just been placed before the reader, and were, in fact, derived from the same source—our author of the "Essay on the Removal of Taxes on Knowledge."

It is almost amusing in this day, now that the thing is done, to peruse the details which are supplied by way of suggestion as to how the thing could be done. It was insisted that in all cases of delivery of letters from the post office, the labour of distributing a great quantity of other things might be performed without any additional expense. The postman who traverses a street to deliver half-a-dozen letters might, in passing through it, deliver twenty or thirty newspapers without any material addition of time or labour, and all within his day's work. But the private vendor must employ a person for the sole purpose of delivering newspapers, and could not, therefore, do it so cheaply as the Government. The cheap publications, sold for 2*d.*, 3*d.*, or 6*d.*, were forwarded to the country in monthly parts, as the sale and profit were insufficient to bear the expense of weekly conveyance, except to such large towns as Birmingham and Manchester. But were the Government to convey these publications weekly by post, and deliver them to the purchaser by postage at the same price as he now pays monthly, it was not rash to suppose that the speedy

conveyance would be extensively preferred. Parcels of publications, the profit of which was one penny on each publication, might go to the large towns, but could not extend to villages at the distance of several miles, as the profit would not pay the tradesman who sent them. But it would pay the post by whom the labour was already performed for other purposes.

It had been urged that additional vehicles would be requisite for the conveyance of the mass of papers which must be sent by post. This was admitted, with the assertion that the increased returns would more than meet the expenditure. Ten millions of papers were, under the *régime* then existing, annually transmitted to the country through the post. By the removal of the stamp duty, the number would be quadrupled. Moreover, in America and in France, books and papers of all kinds were transmitted by post with a return which fully justified the proceeding.

It was objected by some persons that the metropolitan journals, on which greater capital and more talent are employed, and which ought to circulate freely in the provinces, in order that metropolitan impressions might have their fair influence against local feelings and prejudice, would not be fairly treated. The people, it was thought, would be disinclined to pay the postage in addition to the price of the newspaper, a regulation which would operate prejudicially against the metropolitan journals. These fears were combated on the ground that free competition would cause the public to be supplied with papers without any addition to the price; that the Government, if the regulations were well framed, would entirely supersede the private distribution in respect to distant conveyance; that the immense

multiplication of papers resulting from the change would far more than compensate for any loss; and that if there was a subject in which private interests should not be permitted to stand in the way of public improvement, it was this subject.

To the argument of economy was added the argument of temptation. The taxes removed, not only would the sale of existing publications be immensely extended, but numbers of new and valuable communications would come immediately into existence. There are several bodies of individuals employed in numerous trades and branches of art and science, who are sufficiently numerous to maintain cheap publications, but to keep up a publication four or five thousand readers are wanted; and as amongst these trades only a few, comparatively, live in the large centres like the metropolis, and as the members are dispersed, that is to say, over all the kingdom, it was impossible, under then existing modes of distribution, to maintain the special periodical, however useful it might be. With a postal system, journals adopted to particular trades would arise, and innumerable publications, addresses, prospectuses and circulars would be sent by post.

A great objection to the stamp duty urged by our essayist had reference to the obstructions placed in the way of the efforts of individuals to adapt publications of various sizes and shapes to meet the wants of the people. The burden of taxation increased in proportion to the inability of the people to bear it. The fiscal obstacle to the diffusion of information was greater precisely as every inducement for cheapness ought to have been held out, at a price more adapted to the means of the working

classes, by whom information was most needed, and to whom it ought to have been extended.

It may be proved—so runs the proposition—it may be proved from an intimate inquiry into the means and habits of the people, that the capacity to purchase gratifications which do not form part of what are considered necessaries of life, extends from certain points, in proportion to cheapness, in what is more than a geometrical ratio. Thus, if in any town or place, composed of the average relative proportions of the different classes of society, there are found one hundred persons who can purchase a work sold for one shilling, there also will be found more than three hundred able or disposed to purchase the work for sixpence, and more than a thousand able and disposed to purchase the work for threepence, and so on.

The partial removal of some obstructions in France were next adduced. In 1815, the number of newspapers transmitted from Paris daily by post was 25,000; in 1829, it was 58,000. In 1815, the number of letters sent from Paris was 40,000; in 1829, it was 60,000. The increase of letters was 50 per cent.; of newspapers more than 80 per cent. The produce of the postage of letters and newspapers in 1815 was 5,248,000 francs; in 1829, it was 7,080,000, with a demand for newspapers still greatly in advance. In England, on the other hand, the variation in sales during several years had not been worth mentioning, and, considered in relation to the question of population, had positively been reduced.

In conclusion, the plea that the produce of the taxes on knowledge could be spared, was treated as

a discreditable fallacy. Of the legislator, who with all the facts before him, could oppose or refuse to aid in the entire removal of the taxes on knowledge, but one opinion could be entertained of his capacity or his morality. If, seeing the operation of the taxes in maintaining moral evil, he did not exert himself for their removal, he was criminally careless about the continuance of that evil. If, seeing the misery and crime which result from ignorance, he was determined to maintain the obstructions to the diffusion of knowledge, he was a certain contributor to the crime and the misery.

As the modern scholar, interested in the steps of progress of great political changes, studies the arguments and debates which led ultimately to the removal of the taxes on knowledge, he will be surprised to find to what an extent the reasonings and foretellings contained in these three last chapters were used over and over again until the resolutions advocated were approved, adopted, and entered on the minutes of the nation.

CHAPTER XII.

THE SUPPRESSION OF INTEMPERANCE.

WITHOUT being literally an advocate of total abstinence from alcoholic drinks, the author we are reading has been, from the first days of his active life, an observer of the evils incident to the use of those drinks, and a strong friend of the politicians who would restrict their indiscriminate adoption as beverages.

It is just to him also to observe that some legislation which has of late come into operation on this subject, as it would seem independently of him, had its origin from him. I shall show this fact by one or two striking instances in the next chapter.

The first time on which our author appeared in the field in connection with the question of intemperance, was as a witness before the Select Committee appointed by the House of Commons to inquire into the subject of drunkenness. This committee, with Mr. J. Silk Buckingham as its chairman, held its sittings in the year 1834.

The committee was the first of its kind, and appears to have been looked upon, in its day, as something extremely anomalous, fanciful, and Utopian. One of the commentators on the labours of the committee, after they were published, reports that when the proposition was first submitted in Parliament to make

the intemperate habits of the people, and the causes and consequence of general indulgence in such habits, the subject of legislative inquiry, it was received with derision; and when the noble lord the Chancellor of the Exchequer was first asked by a deputation from Ireland to give his sanction to such an inquiry, he expressed his doubts whether, even if it were moved for by any one member, a single other person in all the House could be found to second it. In his opinion, a proposition to turn St. Stephen's Chapel inside out would be just as likely to meet with support.

The Chancellor of the Exchequer, although he exaggerated the difficulty, was not, as it turned out, very wide of the mark. The first hundred of the petitions presented to the House of Commons, praying for such legislative inquiry, with a view to devise a remedy, were received, we are told, with a levity which showed that a want of acquaintance with the subject was almost universal amongst the members of the senate.

The petitions, nevertheless, continued to pour in; the discussion which was elicited upon them drew out some shocking details of the evils of drunkenness; and, at last, the motion for a committee of inquiry was carried by a majority of sixty-four against forty-seven. But even when the committee was appointed, there were many of its members who did not deem the inquiry of sufficient importance to demand their attendance; and there were others of it, it is reported, who entered on the investigation with feelings of doubt as to any beneficial results arising from their labours. Day by day, however, the facts which continued to come out assumed an increasing

public interest; good and thoughtful and well-informed men gave their evidence without reserve; the committee sat until the close of the session; and when, at the end of its labours, the mover of the committee delivered himself upon what had been done, his speech created so marked an impression, that a revised report upon it was generally called for, and the verbatim copy of it, as reported in the *Mirror of Parliament*, was reprinted in London, and, subsequently, in various parts of the country. Of this address, during its various editions, more than a million copies were sold, and, in several instances, public meetings were held in provinces, at which the speech was read to many thousands of hearers, and resolutions were passed supporting the views which it expounded.

All the political work for the removal of intemperance may be said to have had its commencement in the labours of this remarkable committee, and in the admirable evidence which it drew forth in its sittings between the 9th of June and the 28th of July, 1834.

In looking over the volume of evidence, the names of the men who supplied the facts come before us now as historical names in the temperance cause. The Rev. John Edgar, of Belfast, Dr. J. R. Farre, of London, Mr. William Collins, of Glasgow (father of the present Sir William Collins), Mr. Joseph Livesey, of Preston, called the "Father of Temperance," who died in 1884; Mr. John Poynder, clerk of the two hospitals of Bridewell and Bethlehem, and many more made their first prominent appearance in these Parliamentary minutes of evidence.

Of all thus concerned, one, I believe, alone survives,

and he the author whose works are now under our review.

Mr. Edwin Chadwick, called in and examined on the 11th of June, 1834, deposed that he was a Barrister, and that he did not volunteer his evidence on the subject because of greater knowledge, derived from his own perception of the prevalence of drunkenness amongst the labouring classes, than most individuals possess who observe the people in the streets through which they pass, but from evidence communicated to him incidentally, when acting as one of His Majesty's Commissioners of Inquiry into the Operation of the Poor Laws, and as one of the Central Board of Commissioners for inquiring into the operation of the Laws for the regulation of Labour in Factories.

He then delivered his evidence derived from the sources specified.

Influence of Intemperance on the Production of Pauperism.

The evidence afforded on the influence of intemperance on the production of pauperism was of the most convincing kind. Derived from inquiries extended through the metropolis, and through the counties of Berks, Sussex, Hertford, Kent, and Surrey, and through the agricultural parishes adjacent to the metropolis, it indicated that the habits of drinking, common to those who received out-door, as well as those who received in-door relief, were most developed amongst the out-door population. In the London parishes a considerable proportion of the out-door relief was spent in the gin-shop, immediately after the pauper had departed with the

money from the pay-table of the parish. In St. George's, Southwark, it was discovered that £30 out of every £100 of money given as out-door relief was spent in the gin-shop during the same day. In another parish one publican stated that he received £2 more for gin on Board days than on any other days. It was further shown that one of the most mischievous things the Legislature ever did was the reduction of the duty on spirituous liquors.

A little later on in the evidence a statement is made which has, of late years, been often repeated: that the great number of houses in which intoxicating liquors are sold is a common cause of intemperance and of the pauperism which springs from it. It was stated by witnesses in the counties that the number of beershops had, undoubtedly, that effect; that the workman when he came home from work, in passing through the village where there was formerly only one public-house, had now to run the gauntlet through three or four beershops, in each of which were fellow-labourers carousing, who urged him to stay and drink with them, and that he must be a remarkably steady man who was able to overcome these solicitations.

The same view was extended to the drink shops in the metropolis, especially to the gin-shops. Any constant suggestion or provocation, by display, to persons whose appetites were not well regulated, had the same effect. Those who expended so much capital in gorgeous decoration, calculated to arrest attention, "must find their account in it." As to the number of these houses in regard to the necessity of a reasonable supply of drink for health and refreshment, it was contended that any supply whatever, of gin, was

greater than the necessity required either for health or for refreshment.

These pregnant truths, let it be understood, were told more than half a century ago. They require, unfortunately, to be retold in this day, and as forcibly as ever. Still they who expend so much capital in gorgeous decoration of the gin-shop, calculated to arrest attention, "must find their account in it." Alas! yes; and what were shops in 1834, are "palaces" in 1886.

Touching the effect of the expenditure of out-door relief to the poor in the purchase of drink, the witness entered into further detail; and in relation to the question whether the increased amount of poor's rates, occasioned by drunkenness, was greater than the gain to the revenue by the spirits consumed by such persons, our witness answered, that so far as it related to the consumption by the pauper classes, that, of course, must be the case. Of the causes of pauperism, he attested that the almost universal evidence throughout the town parishes represented the main cause of pauperism to be reckless improvidence, chiefly manifested in excessive indulgence in drink, and that a number of the persons who were receiving out-door relief were persons who, by drunkenness, were rendered incapable of supporting themselves.

With much direct boldness of expression, the witness laid bare an additional evil, with an exposure of the selfish quality and deception on which the evil was based. Referring to the efforts which were then being made by the Poor Law Commissioners to abolish the indiscriminate out-door relief which disappeared too often in gin and beer, he explained

that the opposition to the reform was not confined to the poor alone, but that the publicans and their superiors, who were the losers by the reformation, took their part in it. In the town of Cookham the change was stoutly resisted, chiefly by the instrumentality of a considerable brewer. This man headed the opposition to a change of system, and bought up the smaller shopkeepers, and all who were under the influence of the publicans, to resist the beneficial change that had been introduced. After the change, its operation was manifested in an increase of sobriety, and then the opposition rallied. Not a word was uttered of the loss to the beer-sellers from the change. Not a word was uttered, that the ground assumed of pure sympathy for the paupers was the same as that of other officers who, deriving considerable fees and emoluments from the existing practices of law in relation to bastardy, opposed a change of law on that subject from an assumed sympathy with the victims of seduction and a dread of increasing moral evils.

In brief, the selfish side of the argument in favour of the indiscriminate sale of intoxicating drinks was, perhaps, for the first time, exposed mercilessly, and for the first time, certainly, on evidence which admitted of greater proof as to its correctness than had previously been supplied by any authoritative witness. The evidence was strengthened by the very coldness of it. The other witnesses against alcoholic dangers were moved greatly by enthusiasm; this witness was moved purely by reasoning from data patiently acquired.

CHAPTER XIII.

PRACTICAL REMEDIES FOR INTEMPERANCE.

IN continuance of his evidence on intemperance, our witness was struck, he told the committee, with the observation that in Scotland—so remarkable at that time for Judaic observation of the Sabbath—there was more intemperance than either in England or Ireland. In England, half a gallon per head was the allowance of ardent spirits annually consumed. In Ireland, the allowance was one gallon; in Scotland, the allowance was two gallons. This fact, with many others which he had collected, led the witness to think that restrictions upon innocent amusements and pleasures during holidays might, with advantage, be removed, and that if they were removed, there would be less drinking on such days. In the rural districts, as well as in the vicinities of some of the towns, he heard very strong representations of mischiefs from the stoppages of footpaths and ancient walks, and of extensive and indiscriminate enclosures of commons which were previously used as playgrounds. These curtailments of means for innocent recreation drove the men to the public-house as the only remaining place of entertainment. The evils extended to a still greater extent, for they affected the younger

members of the community. There were no sufficient playgrounds for the children, who, therefore, instead of playing in the fields and commons, were to be seen assembled at cricket or other games in narrow, dirty, or dusty lanes, and on the roads through the villages, to such an extent, that it was often difficult, in driving along, to avoid running over the children. This confinement of the young to the streets and alleys of crowded towns brought them, in their earliest days, when their minds were most impressionable, into communion with people and with conditions of misery which it was most important for them to avoid, while it kept them from communion with the broad and beautiful and healthful nature which it was most important for them to approach and appreciate.

In order to prevent the evils produced by the errors thus detected and described, many suggestions were tendered to the committee.

Recreation versus Intemperance.

It was proposed that the means of gratifying the desire for all innocent recreations and enjoyments should be freely thrown open without any kind of bigotry, prejudice, or fear. Practically, this advice amounted to that extension of privilege to the working classes which has been asked for so earnestly, but unsuccessfully, in the present day—the entrance on Sundays into museums, galleries, and other places of intellectual pleasure. Wean men and women by all means possible from the gin-palace and public-house; let the builder of the gorgeous drinking house no longer have the gorgeousness to himself alone; let

him feel that he has a rival of a better and a purer kind, and the competition, be it ever so slow on the part of his rival, will be beneficial in the end.

Education versus Intemperance.

In furtherance of this same reform amongst adults, the witness dwelt also on the effect of education of the masses as a counteracting agency. With respect to the manufacturing classes, it appeared, he said, to be acknowledged, on the concurrent testimony of all considerable employers of labour, that the best informed of their workmen, the best educated, were, uniformly, the most sober and valuable. The absence of education was, commonly, attended with an incapacity of husbanding wages and of using high wages. Under such circumstances, high wages were declared to be injurious rather than otherwise—the uncultivated and improvident having no idea of economy, nor of laying by for times of need. Stagnation to them meant ruin; a fall produced the sensation of a tax; a rise drove them into sensual excesses, excesses which are fatal to the health, industry, and contentment of all who for want of education have no fund of self-amusement, no refined tastes to gratify.

With evidence of this nature in hand, it was impossible to be too earnest on the matter of utilizing education for the suppression of intemperance. In the course of inquiry under the Poor Law Commission, most striking instances of the effect of a good education in producing frugal and temperate habits were observed. Pauper children to whom a good education was given, got into employment, and rarely returned or became burdensome as adults; while

other pauper children to whom a bad education, or no education at all, was given, were continually burdensome, and became drunkards, prostitutes, or thieves. It may be submitted, therefore, continued the witness, "as deserving the consideration of the committee, whether sober habits may not be efficiently promoted, indirectly, by the formation of cricket grounds and public walks; by horticultural gardens in the neighbourhood of the smaller provincial towns; by the institution of zoological repositories in the neighbourhood of the larger towns; and by the free admission of persons decently dressed into such institutions on Sunday after the morning service."

Cottage Gardens.

Another of the great methods for weaning the ignorant populations from drink and habits of drinking, was a recommendation of the pursuit of gardening by the poor, on allotments of cottage gardens of about a rood to each person, but with the provision that there should be no extent of allotment beyond what might be cultivated during spare time as an amusement, without inducing a reliance divided between the produce of the allotment and regular labour. This plan, carried out to a large extent in various parts of the provinces, became extremely popular, and led, as I know from direct observation, to a large amount of good. I am acquainted with a village containing about eighty families, in which garden allotments weaned the poorer class from public-house indulgence after work, until one public-house out of three had to be closed, whilst the other two suffered severely in income.

Healthy Houses and Comfortable Homes.

Again, in respect to adults it was urged, as a much needed means of reformation from intemperance, that the homes of the working people, agricultural and mechanical, should be improved so as to be rendered more comfortable and attractive. If the home can be made healthy and comfortable, the battle against the too comfortable public-house is half won. This was a point which our witness tried to impress forcibly upon his hearers. It was not a new point, and he did not claim it as such; but in those days it was a subject which had received so little attention, it would sound, no doubt, as both new and strange. We are fighting the point yet, backwards and forwards, if I may so express it: backwards, towards drink as the cause of the miserable home; forwards, towards improvement of the home as one device of cure for the drink evil.

Restriction of Drink-selling Centres.

The idea of suppressing intemperance by limiting the public sale of intoxicating drinks was well put and enforced. The witnesses in the country whom our witness had examined were very generally agreed that drinking on the premises of beershops should be prohibited; and although it was admitted that in many instances such a regulation would be evaded, it was contended that it would be extensively effectual if a circle of a given radius were drawn round each beer-house, and drinking of any beer from the house were prohibited within that circle, that is to say, drinking on the premises. The beer-shops in bye lanes were commented on as specially dangerous refuges of the most depraved members of society.

INCREASING THE LICENCE DUTY AS A RESTRICTIVE MEASURE.

On this topic our witness spoke with the same kind of reserve as that which we still hear from many reformers, who hold that the check to intemperance must be by moral, rather than by legislative and restrictive measures. His reasons, as they were stated at the time, were, that considering how large a proportion of the labouring people are deficient in the habit of self-control, or the power of resisting immediate gratifications; how many of them are in a condition in which an advance in wages is equivalent to an increased supply of drink; how strong are the interests involved in furnishing the supply; and how inadequate is the power of the local police to carry out an efficient system of restriction; more would be done by education, by the substitution of innocent for gross and noxious modes of excitement, and by facilitating cheap and harmless modes of amusement, than by legislative restrictions.

At the same time it was submitted that the proof of absence of self-control ought to constitute a case for legislative interference; and that restrictive measures might be resorted to concurrently with other measures, to influence the habits of the people.

SUPPRESSION OF PUBLIC-HOUSES AS PLACES OF BUSINESS.

Another evil which our witness declaimed against was the use of the public-house as a place for the transaction of various items of public business. Admitting the difficulty of carrying on the work of a benefit society in places where the public-house is the only place convenient for holding the meetings, he suggested that in every such case the drinking

fines should be abolished, and that the want should be supplied by some room in every village or locality, such as the village schoolhouse, for holding meetings of benefit societies, banks, and clubs of various kinds.

Encouragement of the use of Light Beverages, and of Coffee Taverns.

Our witness preceded Mr. Gladstone in the suggestion that in order to temper intemperance the people should be enabled to obtain the lighter wines of the Continent. He had heard a complaint that on holidays there is scarcely any alternative, for those who are disposed to be temperate, between drinking cold water and drinking strong fermented liquors, and that consequently the strong drinks were taken. He had also heard of Englishmen, of the working class, who, on the Continent, had contracted a preference for the lighter beverages in use in the country, the lighter wines, or the orgeat, or other beverages. The evidence of a working man named Edwin Rose was specially submitted in proof of this view, and his regret that there could not be some sort of free trade between France and England so that cheap French wines could be brought over here and sold as cheaply as table beer. In the same direction of suggestion the sale of good and wholesome coffee in the metropolis, and other large towns, in well-regulated coffee-shops, was put forward as an important measure of advancement.

Since this evidence was delivered, both the suggestions it offered have been brought into partial operation. The light French wines, as they are called, have been introduced, and the coffee-selling movement has been greatly favoured. The first has

not been followed with the good results of checking intemperance which were expected of it, for wine is wine, be it ever so light, and once tampered with begets the desire for itself in the heavier form; but the coffee movement has been more successful, and is attaining greater success day by day.

Work and Strong Drink.

There is one remaining topic in this evidence which must be noticed before I close the chapter. A question was put to our witness, which brought up the subject of physical work under the influence of fermented drinks. It was very generally assumed, then as now, that hard physical work was accomplished most easily under the influence, or it might be said under the aid, of fermented beverages. The witness, pressed for information on this matter, explained that he would prefer to confine himself to repeating what he had learned from other witnesses rather than state his own impressions. From this learning he inferred that inclinations have usually governed the doctrines relating to the use of fermented liquors, and it appeared, therefore, to be generally considered that strong drink is necessary for strong men and for strong work. Some evidence, however, which he had taken in the course of a collateral investigation, was at variance with this doctrine. Whilst examining some very strong labourers, he questioned them as to their diet and mode of living, for comparison with the diet and condition of paupers. One labourer of superior prowess reported that he found that the beer his wife brewed for him, which was ten or twelve gallons from a bushel of malt, was as good beer as he could,

desire for the hardest work, for thrashing, or for piece-work, and he thought as good as any working man could wish for. Strong beer over-excited men, and as the excitement was for a short period, a repetition of the stimulus was requisite. This opinion, at which our witness was at first surprised, was, nevertheless, corroborated by other labourers. One set of labourers informed him that they had been offered porter in the morning, but they declined, and assigned as a reason—a reason, by the way, as forcible as it was scientifically true—that "*it made them work their hearts out.*" The stage coach drivers of that day furnished him with a further example. The circumstances of the stage coachmen, their midnight travelling, and their exposure to all weathers, were popularly considered as calling for the use of strong fermented drinks to "keep out the cold," "the wet," "the fog," and to keep "the wind off their stomachs." The constant dram-drinking of some of the class, who were presumed to know what was best for them, would justify that opinion. But many of the coaches were conducted by men greatly advanced in intelligence and respectability, and they, he, the witness, was informed, found it conducive to their general health and power of enduring the work and the weather, to pursue a more abstinent course, to take tea, coffee, or milk, and to avoid the general or frequent use of stimulants when on duty.

Summary of Evidence.

The summary of this evidence delivered in 1834 is as striking as it is valuable. Like all matters of truth derived from simple but faithful readings of natural phenomena, it is as good to-day as on the

day it was rendered, as useful, as practical. It stamps its author as one of the first, and as one of the most advanced, of the leaders of the great temperance reformation.

If healthy recreation for the masses of the people, education, cottage garden cultivation, healthy homes, suppression of public-houses as places of business, and substitution of coffee taverns for gin palaces, had been combined fifty years ago with gradual restriction of liquor selling, and with the proved teaching that men could do hard work and endure hardship better and more healthily without than with intoxicating beverages, what would the England of this day have been? Or rather, what would England not have been, reclaimed by such means from her besetting sin, and strengthened by the development of virtues which she has yet to realize as the foundations, and only foundations, of peace, plenty, and power!

CHAPTER XIV.

THE DEVELOPMENT OF STATESMANSHIP AS A SCIENCE, BY THE INVESTIGATION OF THE PHENOMENA OF STATE NECESSITIES.

IN the part of the original library with which I am dealing,—that, I mean, which treats of political and economical subjects,—I light on an address delivered in 1859—at a special meeting of the Society for the Amendment of the Law—and published afterwards by Charles Knight. In this paper, in every page characteristic of its author, there is brought under discussion the methods of preparation for legislation, as especially applicable to the reform of Parliament. The paper is prefaced by a letter from John Stuart Mill, commending the argument and expressing his general concurrence with the views which it advances. The fact of Mill's concurrence would, historically, demand that in a work of this kind, the essay now spoken of should be brought under comment, but the essay itself would also demand it, whatever was said for or against its teaching even by Mill.

The author sets out by mentioning, in modest terms, what nearly all his hearers must have known, that for a long series of years he had been charged with the duties of Commissionerships of Inquiry into the subjects of pauperism and poor law administration;

into criminal and legal administration; and, into the evils attendant on excessive manufacturing labour, with a view to some nearer or remoter impending legislation. He then declares that he has never known any one investigation "*which did not reverse every main principle and almost every assumed chief elementary fact on which the general public, parliamentary committees, politicians of high position, and often the commissioners themselves, were prepared to base legislation.*"

In order to prove this strange and, as I well remember, startling proposition, the following illustrations were supplied:—

1. As regards pauperism, the prevailing doctrine, founded on the theory of Malthus, was, that the general cause of pauperism was the pressure of population on the means of subsistence, and that the chief remedy for pauperism was extensive emigration. But the evidence brought before the commission on poor-law administration showed that this was not the case, and afterwards, when, through the advocates of the Malthusian theory, provisions were made for the emigration of paupers from over-burdened districts, the demand was not shown as had been expected. In one district, where there were full 30,000 recipients of out-door relief before the passing of the Poor Law Act, there was afterwards great difficulty, and notwithstanding all the exertions of the emigration agents, to fill two emigrant ships, and those persons who were removed by emigration were, except in a few cases, above the classes for whom the Act was intended.

2. As a basis for the introduction of out-door relief to the labouring classes in Scotland, it was alleged

on high authority that the ravages of typhus fever were occasioned by destitution. An examination of the facts showed that the greater number of persons taken to the hospitals with typhus fever were men in full bodily vigour, who were, at the time of attack, in full employment. Another investigation showed that in the manufacturing districts in England, at the times of severe manufacturing distress, and when large bodies of men were thrown out of employment, typhus, instead of becoming rife, diminished in a remarkable degree, from the circumstance, that in place of being overcrowded by day in close, ill-ventilated shops, and at night in cesspool-tainted houses, the men were spread abroad at large, in the open air. Again, the common lodging houses, once the foci of typhus, had been made often the most healthy of the habitations of the poorer classes; not by largesses, as the current doctrine implied, but by well-directed sanitary measures.

3. It was maintained by Malthus and others as a principle, that pestilence was a corrective of excess of population. On examining into the facts, it was discovered that the ordinary epidemic visitations of disease really aggravated the pressure upon the means of existence, and that every such ordinary visitation was followed, amongst the classes most attacked, by an increase of births which more than supplied the numerical reduction by death from the epidemic. The effect of the pestilence was to diminish the able-bodied and self-supporting in proportion to the infantile and dependent.

4. The saying, that "poverty is the mother of crime," was almost received as an axiom. On careful and minute inquiry, which the author directed into a

variety of details, he could find scarcely an instance of a respectable workman falling into habitual delinquency from the pressure of any distress which the exercise of ordinary prudence would have averted. The general condition of habitual or professional depredation flourished in the absence of a proper preventive police, and in the absence of appropriate penal administration. Delinquency paid better than regular industry.

From evidences such as these, the author held that a new mode of procedure was required in all cases of new legislation. The mode, in order to be successful, must be examinational, exact, and to those who conducted the primary steps of it, as well as to those who legislated upon it, strictly educational.

These illustrations,—as indicating defects of procedure,—duly rendered, the essayist proceeded to inquire into and to explain the best way in which the educational method for the development of statesmanship should be conducted. Should it be,—

By the close Cabinet method?

By special Committees of Parliament?

By special Commissioners of Inquiry?

To the first-named of these questions, the answer was decidedly in the negative. The Cabinet method, close or secret, almost of necessity limits the facts, accepted as the bases of legislation, to those which may happen to be within the knowledge of the one, two, or three persons forming the committee to which the legislation is confided. It excludes the investigation of extensive orders of facts which cannot be examined without showing the drift of the inquiries; and it indicates to opponents the nature of the measures contemplated.

The method of preparation of legislation by select committees of Parliament, whether open or close, was next brought under notice. Of this method it was urged that although it may have advantages over the close Cabinet plan, it leads only to a divided attention with other Parliamentary duties. Thus, some committees have entered far enough into the examination of the subject before them to perceive that the complete investigation required more sustained labour than was compatible with the positions and the other duties of members, and have concluded by recommending that the subject should be confided to the labours of a commission, the value of which is recognized in the provision made under the 15th and 16th of Victoria, for the appointment of commissions for the purpose of instituting local inquiries into charges of corruption against particular places.

Respecting all these modes of inquiry, it was contended that the local aptitudes being the same, the value of each mode of procedure is in accordance with the opportunities and the extent of attention which it ensures. In legislation, as in other things, gross ignorance sees no difficulties, imperfect knowledge discovers them, perfect knowledge overcomes them. For a long period, almost every Prime Minister was loudly and confidently called upon in Parliament to produce, without delay, efficient measures for the suppression of the evils attendant upon the mal-administration of the poor laws. Immediately upon a change of government, the new Cabinet was called upon to produce, within weeks or days, complete remedies for the mal-administration prevalent during two centuries. But when the task was successively declined by such statesmen as Pitt,

Windham, Huskisson, Sir Robert Peel, and the Duke of Wellington, it was not to be supposed that the task was beyond the competency of the men, but rather that it was beyond the opportunities of the attention and inquiry and consideration which their positions allowed to them. They detected the difficulties of the subject, but had not the time to acquire the knowledge of the varied and extensive details requisite to overcome the difficulties. If they could have changed their positions; if, abandoning discursive attention to multifarious objects, they could have become Commissioners of Inquiry, giving ten hours a day of labour to the one subject for ten years; and if they could have travelled about and viewed the administration of relief in various forms, and examined witnesses of every description, on the spot, it is to be presumed that the results of their labours would have been worthy of their superior positions.

There was yet another aspect of this subject which our essayist brings forward with excellent insight and ability, and which deserves to be recalled at all times when any great and thrilling national question is engaging the attention of an administration. The aspect is that which relates to the attitude of the persons who, in high and exclusive positions, hold a power which they are expected every day to wield. These persons, says our author, are often guilty of dangerous and injurious inaction arising purely from their doubts as to the information, the feelings, and the opinions of the large masses of the population, and as to the expression which may be evoked from them if a decisive measure be adopted and carried. In other words, they in authority dread

because they do not understand the latent element of the popular opinion. In the absence of any trustworthy explanation persons are led to ascribe their own opinion to the masses, who, after all, have formed no opinion whatsoever on the subjection dispute, but who by loud repetition may be made to adopt the opinions ascribed to them.

There is, I conceive, not one observant statesman or scholar who does not recognize the strict truth of this analytical exposition. It is an exposition, sharp and clear, of the opinion of the publicist for or against the opinions of the masses. It is an exposition of the cause of the frequent failure of prophecy by public writers who have not had time to investigate, from personal observation, the subject on which they write. It is an exposition, equally clear of the common correctness of the predictions of those hard-headed, though less accomplished men, who are with and of the people, and who, in their simple and unacceptable manner, so frequently explain the popular mind and forecast the popular will.

There are numerous other arguments adduced by the essayist in support of the mischief likely to arise from the Cabinet method, and from the method by the Parliamentary Committee. They all point to the fallacy of both those methods, and lead to the suggestion of the third plan, which, under a special and permanent organization, is proposed as the best of the best.

CHAPTER XV.

DEVELOPMENT OF STATESMANSHIP (CONTINUED).—THE OPEN METHOD OF INQUIRY.

THE faults of the Cabinet and Parliamentary Committee method exposed, the "Open Method," as it is styled, is next examined and described.

The open method consists broadly of the method of inquiry by an open Commission, composed of competent persons, as a preliminary to every important step in legislation.

This method, it is suggested, admits of complete investigation as to the state of information and opinion in the most obscure nook and corner of society, and the mode of action of the Poor Law Commission is adduced as a good example of the method. Under this commission, queries were submitted to magistrates at petty sessions, to chairmen of vestries in large urban parishes, and to individuals in all parts of the country who were conspicuous for the attention which they had paid to the subject under inquiry, or for their success in local administration. In this way many hundreds of persons, without being taken from their homes, or seriously inconvenienced, were brought into orderly councils, where every one who had anything to say might confidently

expect to have what he said duly read and considered. When, for the purpose of eliciting evidence, written or printed, questioning was not applicable, as in the case of labourers, and even of farmers and overseers, oral examinations were carried out by "itinerant commissioners" and assistant commissioners.

Again, under the Commission of Inquiry into the Labour in Manufactories, artizans as well as their employers were examined in every part of the country, and processes of manufacture were examined at the places in which they were carried on.

In like manner, under the Constabulary Force Commission, questions were directed to all the magistrates in petty session, and to the poor law unions throughout the country. Within the prison walls and cells investigations were also conducted by the oral questioning of the assistant commissioners, from which examinations, with the aid of the chaplains of prisons, important revelations were obtained, for the guidance of penal administration.

The "methodisation" of the masses of material so elicited; the placing of the information in the order best adapted to ensure correctness, completeness, and clearness of expression; the condensation of these masses of material; the expression in one general proposition of groups of particular facts; and the application of the facts to the ends sought by the whole inquiry, form the chief labour of a properly constituted Commission. Such labour under the Poor Law Commission of Inquiry occupied one whole year of undivided and incessant attention.

What the effect of the working of a properly constituted commission would be is traced out, in this essay, with abundance of useful illustration. I shall

be content to refer to one or two illustrations, only, and I select them because they are striking both in fact and in lesson.

In the course of some investigations which the writer of the essay had to conduct on the question of intramural interment, the amount of separate provision which had to be secured for each religious denomination required to be considered. The expediency of ascertaining by statistical enumerations the numbers of each religious denomination was thus raised in some places, to which proceeding reluctance was now and then offered by the clergy of the Established Church, who, misled by the numbers of dissenters in their parishes, inferred that the proportion of the provision to be made for the burial of dissenters would be very large. The results of inquiry showed that these fears were altogether groundless, and that the numbers of dissenters requiring space for interment were very small.

It was the persuasion of the public leaders of the whole nation on one famous occasion which many will remember, that the number of Roman Catholics had greatly increased in England, and must be estimated by many hundreds of thousands, probably by one or two millions. This impression was corroborated by the bull issued by the Pope for the appointment of a Roman Catholic hierarchy in England, and by the elevation of Dr. Wiseman to the rank of Cardinal, in 1850. A statistical enumeration was, therefore, obtained of the number of sittings in the Catholic places of worship, taking such sittings as if they were always filled. From this enumeration it turned out that the Roman Catholic population of England and Wales occupied one hundred and eighty-

six thousand one hundred and eleven seats, a little more than would be occupied by the population of one of the larger metropolitan parishes—St. Pancras or Lambeth—or about one per cent. of the whole of the population.

Such facts as these, and all other facts for forming the basis of every systematic research leading towards or to legislation, would, the author of this suggestive paper believes, lead to a true philosophical political progress, to a real science of politics resting upon experimental test and evidence. The will of the country would be tried and proved before any one dared to declare what that will might be. Less than this in legislation is mere guess work, the assumed opinion of a few men in authority in reference to the opinion of all the rest of a community which has, perchance, never spoken a word in relation to its real views, if, indeed, it have formed any views on its own account.

The suggestion seems as reasonably as it is comprehensively sound, if it could be carried out fully and readily. The grand question is how it should or could be carried out. The mechanism proposed by the author of the suggestion for the purpose of attaining a practical success may be epitomized as follows.—

Lord Grey, it would appear, had proposed that some such system of inquiry should be carried out by a special committee composed of the leaders of the chief political parties of the nation. To this idea our author is disposed favourably, as a plan which would be attended with very great public advantages. It is not, however, according to his view, the most appropriate.

The idea in the essay before us is that the "open method should be carried out *by a representative Committee of the Privy Council, aided and armed with adequate means for subordinate inquiry.*"

If this plan were adopted there would be a standing Committee of the Privy Council for every form of legislative inquiry that demanded for its solution accurate and sufficient data. The work of such committee would have no reference to party, nor to government by party. It would be neutral to all but evidence. The committee would be composed of men of all shades of political opinion, and of men representative of the most varied knowledge. It would open the distinction of being sworn on the Privy Council to many men of distinction outside the political arena, to whom the honour might, no doubt, be most acceptable; it would bring to the aid of the politician a vast amount of assistance of the highest order; and it would, to some classes of the nation, be in the most eminent sense satisfactory, as fulfilling the desire that the choicest intellect of the nation should be employed in the inception and the guidance of national interests and national developments.

To this committee, however, the work that would have to be performed would not be exclusively entrusted if the design of the author of the method were carried out to its full action. To the standing committee there would be attached, in each research it had to make, a subordinate and, if necessary, itinerant assistant commission, composed of eminent men and scholars, who need not be members of the Privy Council itself. This assistant commission would hold its own sittings, make its own journeys under the general direction of the Standing Legisla-

tive Committee, report to the standing committee the results of its researches, and if need be, aid in the preparation of the final report for the instruction and guidance of the Members of Parliament, before whom the subject would have finally to be studied and dealt with in the way of direct legislation.

In the concluding passages of the essay before us, the worth of the suggested mode of inquiry, above stated, is defended on the ground of economy of time in the legislative chamber. The powers attaching to oral description and argument, the powers of verbal exposition in any legislative assembly, are at best so limited as to exclude the due consideration of the direct or collateral securities which are essential for the practical working of any legislative measure. Important "adjective" matters are shut out or deferred.

A report of three or four hundred pages of printed matter would surely not be too much, if the matter were all expository and relevant, as a description of the basic principles of any great change in the government of the State. But what legislature could be expected to prepare such a report, or what assembly would be willing to listen to a speech containing such a report, if the material for it were already carefully collated and set forth?

But suppose that a report full in every detail, and from the beginning to the end explanatory, were prepared by an impartial tribunal as a preliminary to legislation, then the information, accessible to every legislature, would be a common property, and would be read, studied, and annotated by those who were to take part in the debate. Then the debate might be brief, the argument terse, the decision

ɜdy. Then, too, the public, having a well-read uaintance with the facts and the principles of the ɪsure debated, could add its voice, not because a voices spoke or a few pens wrote for the measure, le it was itself in ignorance; but because it the same correct information as the men it sent to represent it, the same common sense and gment by which to support, to assist, or, in some es, correct its representatives.

The last portions of the essay, on preparation for islation, deal with subjects connected with reform the franchise, now practically off the record, so ɪt the principle inculcated in its particular cha-ːter as a general method alone remains; and is, perhaps, to be regretted that in this last rt Lord Grey's proposition is reverted to with half-preferential tone, due, doubtless, to the re-ɛct of the author for that very distinguished ɪtesman. But this does not lessen the value of ɛ principle propounded, nor deduct from the im-rtance of the following advice, tendered to com-ssioners engaged in preparations for legislative ɪnges. Firstly, that such commissioners ought to ɪfine their labours to the complete investigation the facts and reasons of the subject before them, l to the strict deduction of conclusions or ɜasures from those facts and reasons. Secondly, ɪt they should leave it to the higher authorities determine whether the conclusions should be bmitted to Parliament or not, and whether they ɜ or are not likely to be acceptable to the House. ɪrdly, that to be guided by any *à priori* pro-bilities, or by what is called public opinion, is frustrate the object of inquiry, by adopting

foregone conclusions, founded commonly on narrow, sinister interests, themselves the proper objects for investigation.

The reception of the suggestive essay on the open method of legislative inquiry received, as I have shown, the commendation of John Stuart Mill. It was honoured by another commendation from a man who, on this particular subject, might, perhaps, even be allowed precedence of Mill—the late Sir James Stephen, who presided at the meeting before which the address was read, and delivered a speech as remarkable for its knowledge and its wisdom as for its eloquence.

CHAPTER XVI.

COMPETITIVE NATIONAL ECONOMY.

BEFORE I bring to a close the selections from our original library which relate to political and economical topics, I am bound to refer to an essay read before the Statistical Society of London, on the 18th January, 1859. This essay is entitled "*The Economical Results of Different Principles of Legislation and Administration in Europe*," and may shortly be described as a thesis on competitive national economy, or an attempt to show how competitive service in the various departments of life may be carried out so as to yield economical results, useful, and indeed necessary, to the nation at large.

It was unfortunate for the popular understanding and appreciation of this essay that the general heading of it—"Competition for the Field of Service"—caused much embarrassment to readers, at first sight. It conveyed the impression that the subject matter related to service in the field, and was of value mainly to men engaged in military concerns. It has no such object. It relates purely to civil affairs, and to the expenses incident to division of competitions for supplying the people with the necessities of existence.

It has been declared and declared, until the expression has become a proverb, that competition is the one safeguard of all the evils of monopoly. Open competition for everything bought and sold, for every merchandise, for every enterprise, has been the demand. The expression is a natural reaction of the mind from restrictions, from monopolies, from guilds, from close services, from secret tyrannies. The essay before us does not controvert this natural freedom of feeling and of argument, but it corrects, and, when it is fully understood, corrects forcibly and logically, the corruption of freedom which may exist in competition itself.

The essay opens with a table, in which is totalized the economic results of the railway services in England, France, Belgium, Prussia, Austria, Germany. The average cost of railways per mile, the average working expenses per mile, the average earnings per mile, the average fares per mile according to classes of travellers, the average payment per cent. to the original shareholders, are all indicated, together with the proportion of accidents and injuries to persons carried, and the number of times that railway travelling is less dangerous in other countries than it is in England.

The table thus adduced as the basis of the argument which is to follow is first shown to present bad conditions of legislative administration. In one item this was specially traced out. The number of deaths varied in different countries in the most striking manner. In France the number of accidental deaths from railway travelling was seven times less, in Belgium nine times less, in Prussia sixteen times less, than in England.

This and all other defects enumerated were umed to be due to one master defect, namely, l economic service and principle—in other words, public ignorance of the fact that there are sound l unsound conditions of competition; that whilst ere are conditions of competition which ensure to public the most responsible, the cheapest, and the st service, service requisite to improvements of the atest magnitude, there are other conditions of npetition which create inevitable waste and inse-rity of property, which raise prices and check provement, which engender fraud and violence, d which subject the public to the worst kind of esponsible monopolies.

The remedy for the defects which thus exist is then fined as consisting of a change of form in compe-ion. The change suggested is that of competition r a field of public service, instead of competition *ithin* a field of public service. The definition is at st reading obscure, and very few have understood . The meaning of it, however, is plain enough, d may be briefly stated from one illustration.

In some of the urban districts of England the thor found places in which two or three sets of ater pipes were carried through streets to supply e people with water. The supplies thus yielded came competitors, ending in monopolies of the rest kind, with bad supplies, high prices to the blic, low dividends to the shareholders, and an most impossible improvement in the separate con-tions of the different bodies or companies which ocured the supplies, unless the charges on the rate-yers, already excessive, were raised, or the returns the capitalists were reduced.

This kind of competition was designated as competition *within* the field of service.

As opposed to such form of competition there was suggested another, namely, that the whole field or district which had to be supplied should be put up on behalf of the public for competition on one condition, "the possession by one capital or one establishment of the entire field, with full securities towards the public for the performance of the requisite service during a given period."

This design was designated as competition *for* a field of service.

The Design in its Application.

The value of the design of competition fo field of service, instead of within a field, is next illustrated by reference to various competitive procedures in railway service; in service of water and gas; in the interment of the dead; in omnibus and cab service; in sanitary works, including house and town drainage; in the manufacture and distribution of bread; in the distribution of flour; in the distribution of beer.

Economy in Railway Service.

Respecting the economy of railways and railway travelling, a favourable comparison was made in regard to France as against England. In France, in addition to the advantage of a much more responsible and regular service fer the public at lower fares, there was an average return of seven to nine per cent. to the original shareholders of the lines worked by companies. In England, with a clashing, immensely more dangerous, and generally less responsible service

the public, the average return to the shareholders as much less, with gigantic fortunes to the promoters of conflicts. In France the original shareholders had the elements of security and further improvement to their property, while the French people had in reversion, on the completion of current concessions, the prospect of further reduction of fares, increased facilities for communication, or a new source of revenue, derivable from past economy, in reduction of the general taxation of the country. In England the greater mass of shareholders had before them elements of depreciation in the bounty afforded by possible cheaper constructions and by competitive extensions, sources of depreciation which are not to be averted by the patching up of quarrels, nor by combinations of respective directorates; while the people had the main arteries of communication clogged with inconveniences and delays, and with high charges amounting to between six and seven millions per annum beyond what would be required under a sound economical administration. The maladministration which incurred these excessive outlays found its remedy in the high fares imposed, despite the acknowledged experience that a high fare fosters a low traffic.

Economy in Gas and Water Supplies.

In relation to the service of water supply and gas to great communities the same argument was pursued. In the commissions in which the essayist had taken part, he and his colleagues had found in London a competition, within the field of service, divided amongst seven companies and establishments, six of which

were competing with two and three sets of pipes, each belonging to different companies, running in many of the same streets. These companies had become multiform monopolies, doling out supplies of water of inferior quality, often unwholesome, and of insufficient quantity, although positively nearly three-fifths of it ran to waste during the intermittent periods of supply. Full £100,000 per annum might have been saved by a consolidation of establishments. Suggestions were made to remedy this state of things, but without success; and, afterwards, as much money was expended by the separate companies in the partial improvement of water that was hard and unsatisfactory, as might have led to supplies of soft water of the highest purity, delivered in the most perfect manner.

As to gas supply, the essayist found that in Paris, where the kind of consolidation he was suggesting had been carried on, the basis of competition *for* the public service there had been an improvement in the quality of the gas supplied, and a reduction of 30 per cent. upon the previous cost to private consumers. In a case of supply of gas in a town in the north of England, the essayist had evidence that so long as two companies were engaged in producing the gas, the prime cost of those companies, while they were acting separately, was more than three shillings per thousand cubic feet. But so soon as there was a single competition for the whole field of supply by one establishment instead of two, the gas was produced at a prime cost of one shilling and ninepence per thousand cubic feet. "It was out of the saving effected by a like difference of action that the economical results at Paris were achieved."

Economy in the Interment of the Dead.

On the subject of economy in the interment of the dead another comparison was made, as between London and Paris, and to the advantage of Paris. In London there were over six undertakers available as competitors for each funeral, and yet, under the circumstance of the occurrence of a death,—there being no time to seek about or make inquiries, so as to enable the friends to secure a selection, founded upon a comparison of charges,—the service was commonly a monopoly. The expense to the survivors of all classes above the class of paupers, and particularly to the most respectable class of mechanics, formed a grievous addition to the evils and inflictions of bereavements by death. The charges made were exorbitant, and the character of the services rendered was in every respect low and objectionable, only befitting an inferior religious and inferior social condition of society. In the more densely peopled districts of London nearly 60 per cent. of the population died in the same room in which the survivors lived. When a father of a family died, the body remained in the living and sleeping rooms of the survivors, whilst the widow was abroad seeking aid or raising the money to defray the excessive expenses for what would be called a respectable funeral, which funeral was often not carried out for days after the decomposition of the dead had commenced.

The expenditure of the funeral, when at last it was arranged, was out of all proportion to the necessity. The allowance made by burial clubs in England was from £5 to £10 for the funeral of an adult member; the lowest allowance £3. But the range of expense

for a funeral in England, exclusive of pauper funerals, might be said to be from £3 up to £100 for persons in fair or affluent circumstances, and from £300 to £500 for persons of rank.

All this vanity and difficulty was and is due, according to our essayist, to the false principle of competition *within* the field of the service demanded. In every case there are more candidates in competition than are required; in many cases fees and bribes add to cost; in many cases useless trappings and shows entice to much further cost; and in all cases there is the chance that they who are forced to pay the cost, the persons under bereavement, are being unjustly punished, because they are already in trouble, and are not in a position to resist a tax which is as false as it is heartless.

In Paris and other continental cities the entire field of service for the interment of the dead was put up to competition for limited periods of time, *i.e.* for terms of years sufficient for the renewal of carriages and of establishments. To suit the means at the command of the different classes of the community, the scales of cost were divided into series of nine, so that the average of expense might run from 15s. to £145 in English money, out of which sum, however, a proportion of 60 per cent. went, at the time when the essay before us was written, for the support of public worship. The average expense of a funeral in Paris, consequently, for respectable persons, would be a little over £14 of English money, or one-half of what would be the expense in the same class of persons in England. To show the entire difference of expenditure between England and Paris, the sums paid for 28,000 funerals in Paris and for 45,000 in London

were computed. In Paris the entire expense, including the tax for the gorgeous rites of the Roman Catholic Church, was £80,000 for the 28,000 funerals, or rather over £2. 17s. 2d. per funeral. In London the entire expense for the 45,000 funerals, without any special Church tax, was £626,000, or over £13. 18s. 2d. per funeral.

Further, by computing what would be the estimated expenditure in London under a consolidated system, and under competition for the public service, the essayist came to the conclusion that the £626,000 would be reduced to £250,000, including the buying up of the then existing cemetery companies, and improving the service at every point.

CHAPTER XVII.

COMPETITIVE NATIONAL ECONOMY (CONTINUED).

UNDER the head of unregulated competition in minor conveyances for travel there are many points of importance, some of which are to a certain extent out of date, some of which remain. I will refer o one or two of these points.

At Richmond boatmen require two shillings or two and sixpence per hour for their services, with, perhaps, one and sixpence for the second hour, which, at full work of ten hours a day, would yield a remuneration of fifteen shillings to labourers of a class to whom six shillings a day would, for regular employment, be high wages. Double and treble the legal fares do not, however, satisfy the competitors, who charge their anxieties and discontents as well as their losses upon the public, for with all these extortions the condition of those engaged in the service is wretched. In the conflict of three men for the service of two, or two for the service of one, anti-social feelings of the most malignant character are engendered; and in the necessity which such persons consider themselves to be placed, of compensating themselves for the waste of their time and the risks of the competition, an almost wolfish

rapacity to prey upon the necessities of the public is also engendered.

Economy in Cab Service.

In the cab service it is suggested that by competition *for* the field instead of within the field, a service equal to the present might be obtained at fourpence per mile, and that at the present legal fare of sixpence per mile a service approaching in condition that of private carriages could be secured. In this question, it is argued, there are elements involved which might be referred to the moralist as well as to the politician; for the wasted time commonly involves sin, bad feeling, and demoralization, as well as suffering, the suffering in the cab and omnibus service extending to the lower animals which minister to our convenience. The cab horses, driven mercilessly, are returned heated to their stands, there to remain exposed for hours to cold and wet, with often variation to their suffering by being taken to the foul, confined stables of the small owners, stables which are often the centres of disease. The cab horses, in their wretched condition, are thus soon worn out. The drivers, too, suffer; their lodgings are on a piece with those of their horses, and their exposure to wet and cold, in frequent alternation, is equally injurious. Hence, economical service, if properly applied, would be found to be an aid to beneficence.

There is also, continues our essayist, in an eloquent passage, another element involved in this question. There can be no doubt that good, well-ventilated, and warm stabling for the horses, and their better shelter and care during the day, with good sanitary dwellings for the men, would be economical of capital.

But besides the economical there is the æsthetical consideration.

"Until the people, high as well as low, have become less apathetic to the constant spectacle in the streets of animal decrepitude and suffering, as well as of human squalor, filth, and wretchedness; until the people have become impatient of these miseries, and have insisted on their prevention, and of having in their stead spectacles of wholesome, painless, and pleasant life and action, they are not in a proper state of mind for the reception of due impressions of the beautiful, or of that external decoration which the votaries of art, in her highest developments, desire to promote."

The admirable idea rendered in the passage quoted above is supplemented by various illustrations of the distinctions between charges made for services, and charges and payments proportioned to the pressure of necessities. Payments for necessities, and on estimates of the pressures and means of paying them, are sustained by monopolies which are incident and almost essential to the practice of what is called free competition within the field of service. Mr Henry Ashworth, being in New York on a rainy day, had eight shillings and fourpence demanded of him for a half-hour cab fare. He offered half the sum, and it was declined. He then pointed the attention of the driver to the string of twenty other carriages all waiting to be employed, and remarked to the man upon the uncertainty of his making any money at all within the next half-hour. He very coolly replied, "The rain is falling very fast, and I guess I'll spec it." In this case the coachman, by an agreement with his fellows on the stand, had

virtually a monopoly of the service, giving him the power to exact payment according to his estimate of the traveller's necessities and means.

In the case of a water-closet, the actual cost of water for the supply should be sixpence per annum if paid for as an ordinary service, but as a charge upon a necessity the companies levy ten shillings per annum.

The results of these and of other branches of service end in common efforts to charge the waste of capital upon the public, to create virtual multiform monopolies, and to impose, for bad service, high charges exacted from private necessities, while the effect of the sub-division of fields of service by numerous small competing capitalists is to weaken, or, in proportion to the division, to dissipate the means of responsibility incident to want of that skill which ought always to be enforced.

Economy in Sanitation.

I shall have occasion, when I am treating on the sanitary work of our author, to indicate how he pursues, still further, this question of competitive national economy, in its bearings on sanitary works of house and town drainage, water supply, and food supplies. I shall, therefore, in this place, be content to give one illustration of the economic analysis which he made of a four-pound loaf of bread and of a pound of butcher's meat, that is to say, how much of the cost of production, of transport, and of distribution he detected on these two articles of consumption at the prices and rents of a time when land was averaging in England twenty-five shillings an acre.

The rent, he says, in the four-pound loaf, was

about three farthings; the cost of distribution was more than three halfpence, or double the rental. The same doubling of rental applied also to a pound of butcher's meat. It appeared, indeed, that the cost of distributing the produce of the soil was double the rental of the soil. But by the extension of the field of service and the saving of the charges of unnecessary establishments and labour, the expenses, it was argued, might be reduced to less than half, with the result of a possible aggregate saving to the community equal to the whole rental of the land, and equal to the whole of the general taxation of the country.

Summary of Errors in Competition.

The essay on competitive national economy ends with a commentary on the pressure of taxation as contrasted with bad regulation of the public service. The pressure of taxation on the Englishman is heavy enough in so far as relates to those taxes which are taken without a due return of service; yet when they are taken there is an end. But there is no end to the excess of charges to which, in the absence of regulation, the Englishman is subjected; charges exceeding all governmental taxation whatsoever, and accompanied by restrictions and interferences with private life and daily business, frequently more vexatious and degrading than any that could arise, except from the most barbarous mis-government. We hear the Englishman boast that he is opposed to monopolies, and has the highest amount of freedom. And this in face of the fact that, practically, he is exposed, in large cities, to restrictions and to multiform monopolies, which subject him to inferior service

at high prices; and in face of the further fact that his freedom of choice between several competitors, when he really has freedom, is commonly like a free choice of several rotten oranges. If he be of the lower, middle, or of the wage class, he is restricted to a residence within the district in which he labours, and even of new houses has only a choice of those which are "scamped" by the competition of small jobbing builders; houses ill-drained and cesspool-tainted, with spongy, damp walls, rooms ill-warmed, ill-ventilated, disease-engendering, frequently smoky, and the whole at a high rental compared with the price at which good habitations might be produced. In his food he has little choice. His animal food may not admit of adulteration, but diseased cattle, which, if attempted to be sent to the public abbatoirs of Paris, would be confiscated and killed for the menageries, may secure a market in London by the competing butchers on Saturday night.

The Englishman, in short, is everywhere surrounded with snares, from which it is scarcely possible, even for persons of professional knowledge, to escape without a degree of labour, of investigation, and of verification, which in itself is an intolerable tax. If he be of a condition of life in which he could remove from noxious influences, and would travel by railway in carriages of the first class, he is, under the guise of free competition, subjected to a fare of nearly double the amount at which his continental neighbours are free to travel with their families in second class carriages, equally good and under more responsible and safer direction. And, at the termination of his mortal career, his poor remains will fall into the hands of undertakers who, competing *within* the

field, will exact from his survivors double charges for their wretched services.

In the concluding page the author describes that many sensitive persons, who are afflicted by the character of the evils displayed in the conflicts of small capitals, have passionately advocated, as a great social desideratum, the entire prevention of competition. He himself, in favour of sound and economic competition, hopes to give such minds relief, by showing that the evils now incident to competition may be almost entirely prevented, and large economic advantages secured by the regulation of the competitive system. In all the branches of service to which reference has been made from the essay, and in others not adverted to, it could be shown that the mere economy of waste would afford the means of a vastly improved service. A first step, however, to voluntary improvement would be the exercise of an intelligent public opinion, to resist as a common injury the sub-division of fields of supply, until a manifestly adequate case of requirement were clearly made out. It would then be still necessary to support the system of consolidation, in order that the full benefit of the competition to the public should be secured.

It is over a quarter of a century since the essay on "Competitive National Economy" was submitted to the public. For a time it caused some discussion, but the effect died away, things have remained as they were, and, in some directions, matters are worse rather than better. The propositions put forward by the essayist have never been tried, and great competitions for limited periods of time, and subject to public arbitration, seem as far off as ever.

The nearest approach that has been made in the direction indicated is in the co-operative system, which, since the appearance of this essay, has been introduced. But the co-operative system embraces only a part of our author's project; it consolidates, but it puts no limit on the period of competition, and being too restricted to be generally effective, it rather adds to than reduces monopoly *within* the field of service. Hence the influence of the co-operative plan is in the stage of gradual decline by absorption into private enterprises which encourage competition in name, and in name alone.

The great objection to the system proposed, that of consolidated competition for limited periods, is that under it all cheapness or economy obtained in purchase would be accompanied by a diminution in the labour employed in the competitive effort. In other words, the economy would be brought about by the saving of hands. Under such circumstances, the nation, it may be thought, would be robbing Peter to pay Paul. It would have thrown upon it immense multitudes of persons who could find no work, and out of the savings acquired these enforced and discontented idlers would have to be maintained and quieted. The author's answer to this would be that such anticipated dread is a delusion already answered by what has taken place in many developments of the labour question. He has made inquiry on the very point, and has found that when men have been employed in works where one or two could do what three are kept for, the dismissal of the excess of those who were not required has merely had the effect of diverting the labour and giving impulses for new and more appropriate pursuits. Men, he argues, who are,

by sheer misfortune, confined to one grade of work, whether they be fitted by disposition or skill for that work or no, are not possibly all in their right and natural spheres. From habit and dread of change they may oppose anything like a change, and may often violently resent the proposal of a change. Driven to change, by necessity, they are led to find other employments as congenial and as remunerative, while many experience, in the change, benefits they never had anticipated, and never would have realized if they had kept in the old and beaten paths.

Perhaps no part of the argument is truer than this last exposition, seeing that labour is never so thoroughly distributed as when it is diversified, and that humanity has no limits in diversity.

[redacted]

VOLUME I.

PART II.

EDUCATIONAL AND SOCIAL.

CHAPTER I.

ESSAYS EDUCATIONAL AND SOCIAL.

THE essays relating to education and social life belonging to our library are many in number, and cover a wide field. They commence in the year 1831, and they continue up to ear 1886. I regret to say that, owing to their plicity, I shall be able to give to them much less than they deserve. I can only undertake, in- to offer such an epitome as is derived from a ıl collection and long study of them, connect- hem, as far as possible, with the order of time ıich they appeared as well as with the subject.

e characteristic of these essays is akin to that ı marks the political and economical. The aim, ghout, is to collect facts and arrive at principles ractical action from facts. Professor Masson, s review of the works of our author, makes of this method. The phrases, "*Get at the cdents*," "*Mount to the sources*," are, Professor on says, the stereotyped maxims.

e suggestions proffered in the educational schemes from the first, original in one particular sense: were, and are, invariably directed to the com- ion of physical with mental training. In them, oint of fact, the physical is, with very few tions, placed before the mental. The conception

is to make the nation a nation of physical models, as well as of learned scholars; a nation that the sculptor can describe with enthusiasm equally with the historian; a nation that can hold its own in the scale of vitality, and protect its own by the virtues of common physical prowess and endurance, as ably as by statesmanship and knowledge, more ably than by expediency and craft; a nation that shall accept and act upon the motto :—

"*Primo vivere deinde philosophari.*"

CHAPTER II.

EDUCATION AS THE CORRECTOR OF CRIME.

THE first educational essay in the series of the educational class to which I now bring the reader, was published in the *Examiner* of February 20th, 1831, and was issued, marked "not for sale," in a separate pamphlet.

The pamphlet was entitled, "*The Real Incendiaries and Promoters of Crime.*"

Preceding the appearance of this little work, the incendiary had been actively engaged in making England a bonfire. The fires did not break out simultaneously, but travelled slowly from county to county, propagated by *vivâ voce* communication, by the force of imitation, monomania on the rampage,—or by pure revenge.

A young man was executed at Winchester, and was interred in the yard of a village church. An adjacent farm was soon after fired, and illuminated his grave,—the first of a series of crimes.

Other crimes ran side by side; cattle were poisoned or mutilated; witnesses who gave evidence on the facts of crimes were denounced as "forsworn," not for having stated anything untrue, but as having broken the faith which they owed to their fellow-labourers against the superior classes, now viewed as enemies and as oppressors. Assassinations were

plotted, and in some instances effectively carried out.

On the side of the poor and working orders all was tumult, passion, and resolution extracted from necessity. On the side of the ruling classes all, or nearly all, was blind authority, determination at all hazards to keep down the tumult and to rule the land. Of this ruling class Mr. Bentham had spoken as "a class of men by opulence rendered indolent, and by indolence and self-indulgence doomed to ignorance; men who, being by opulence rendered destitute of all motives for mental exertion, and by the very nature of man, from the beginning to the end of life kept in a state of relative ignorance and mental impotence."

It was while matters were in the state here described that the essay on the "Real Incendiaries" was written and published. The essay described the condition, traced out the causes of the condition, and prescribed the remedy.

The remedy suggested was deduced from the tracing out of the cause of the conditions which led to the evil.

It had been assumed by those who by accident were the legislators, that the cause of the bad condition was the diffusion amongst the people of seditious publications, and the too free reading of information skilfully communicated from one person to another. Our essayist removed that delusion completely. He showed that nothing was done by discussion through reading or writing; that few were in any degree competent for such a service, and that before the commission of an actual crime there was nothing in writing to lead up to it. Afterwards,

when by trial of offenders those who tried and carried out judgment made known the offence, then there was a revengeful publication which increased and intensified the evil; but before that, the evil was all carried on by the tongue, by sayings without argument which led to doings without reason.

In these communications for evil amongst the oppressed populations, short sentences and doggrel lines were the great agencies through which the spirit of evil was kept in active operation. Just as in our day the saying, "Accumulated capital is unpaid labour," has become a pass-word, so in those days such doggrels as the following had their way:

"If the people of England be wise,
They will neither pay taxes nor tithes."

Or another, which stripped of its original vulgarity, remains good common sense:

"Hungry stomach, empty purse,
May be better—can't be worse."

Or still another, repeated by a woman at Sleaford, as an inflammatory toast which she had herself drunk to:

"Ye gods above, send down your love,
With swords as sharp as sickles,
To cut the throats of gentlefolks,
Who rob the poor of victuals."

These saws, says our author, less diffuse, and therefore less difficult to be remembered and communicated than print, "are apt on the tongue," and "the jingle" gives them their iterative quality. They were suggested to the mind of the labourer by the slightest occasion for anger. Like the barbarous laws by which he was punished, they allotted one indiscriminate measure of vengeance to every variety of offence. When a senti-

ment is in print, there is something to be seen, and answered, and guarded against; and to persons in power this form of communication would also have the recommendation of there being something to prosecute. These saws circulated unseen; and there was the fear that many a life could be lost on the point of an epigram.

The example of the agricultural population could be added to that of the uneducated population of France before the Revolution, and to that of the Irish peasantry—and indeed of any country sunk in ignorance and impelled by want—in proof that government, by keeping the poor in political ignorance, prepares a retribution of evil for itself in common with the remainder of the community. The proceedings of the aristocracy were of a nature calculated not only to keep the labouring classes ignorant, and render them fanatical, but to make them ferocious What effect had the "strong arm of the law," the "avenging sword of justice," exercised in sanguinary executions, produced on the character of the Irish peasantry? To any well-informed person, who had observed the effects of misgovernment in that barbarized and unfortunate country, how dreadfully demoralising must appear the tendency of these vindictive punishments which had been inflicted on the English peasantry for offences against laws of which those who administered them were, in the first instance, ignorant. "The law rules the poor," said our labourers, "and the rich rule the law." They believed that the rich wielded the "avenging sword" as their instrument, and that for the poor it was powerless. Nor can it be denied that the recollection of such instances as that of the impunity of

the attempt made, in the case of Queenborough, to starve a whole town, and those of Newark and Stamford, aggravated the feelings throughout wide districts. The labourers were thus led to detest the law as their enemy, and blindly to sympathize with every culprit as the victim of injustice and hateful tyranny.

The strength of this feeling was strongly evinced after the execution of a man who, apparently from personal malice, set fire to a mill near Kingston, and attempted to assassinate the owner. When the delinquent was executed, the prosecutor was threatened with the vengeance due to "a murderer," and his premises were fired into. Fear begat hatred —hatred revenge. The poisonings of cattle, which occurred at several places, were noted as instances of the generation of the malignant feeling. The existence of a new feeling of hatred amongst the labouring classes was fearfully marked by their denunciations of the witnesses who charged them, "as forsworn." "Vengeance" inflicted upon men in this state of feeling could only lead to the perpetration of outrages that had long been witnessed in Ireland.

This was the stage of descriptive teaching, and upon it followed the lesson of prevention in the following terms.

The Duties of Government for the Education of the People.

"There can be no safety from the most fearful outrages against life and property but in the intelligence and moral feeling of the labouring classes. The Government should, therefore, in the first place, be imperatively required to abolish entirely every fiscal

impost that can operate, directly or indirectly, to obstruct the diffusion of knowledge among the people. Every facility should be claimed to allow the free operation of individual interests, in supplying publications which may induce the labouring classes to read. No matter how poor, how inadequate, how coarse and distasteful to cultivated minds might be the nature of the publications first sent forth; if they are read, they can scarcely fail to be of service in contributing to the formation of a habit of reading, which will facilitate the diffusion of publications of a more useful and elevated character.

"The ministers of the home department gave effect to one meritorious measure, which was calculated to render more service in preventing devastation than the strongest army Government could have brought into the field. By means of the official franks they circulated throughout the manufacturing districts, 'The Results of Machinery;' a tract which, though defective in some of its reasoning on the main point, was nevertheless highly serviceable for the interesting collection of facts which it presented on the subject to the minds of the working classes. Is the ignorance of our rulers so dense, that they cannot be made to appreciate the advantage of permitting that to be done every day which they permitted to be done on this one occasion? Is their jealousy and cowardice so low, so vile, that they will continue to prevent the accomplishment of this immense good, lest publications which are distasteful to them should thereby obtain circulation?

"Those who possess the requisite knowledge, and the capacity to expound it so as to make it accessible to the understandings of the labouring classes, should

now send forth tracts expository of the circumstances influencing wages, and on other subjects involving the principles of political and domestic economy, and of morals and legislation, which contribute to the welfare of the whole community.

"Concurrently with these measures which regard the *adult* population, strenuous efforts should be made for an universal and efficient education of the rising generation.

"The most pressing measure immediately called for is, however, the entire removal of the odious taxes on knowledge. The reduction of the stamp duty, proposed by ministers, will benefit only the press and the middle classes; as regards the labouring classes, it is paltry, and will keep the larger channels of public information as far out of their reach as before. Every penny of duty retained is a bounty on ignorance. Every minister or member of the legislature who contributes to the retention of any portion of the tax, thereby contributes to the crime and misery by which the community is afflicted to such an appalling extent."

I leave this essay to speak for itself. I had better said, I leave it as it has spoken, for it has been speaking ever since it was written, and has been persistently proving the truth of that which it forecast.

CHAPTER III.

THE HALF-TIME SYSTEM IN EDUCATION.

CONNECTED with the work of our author as an educational reformer, nothing stands more prominently forward, and testifies more clearly to his genius, than the introduction of what is now so well known as the *Half-Time System* in school life. This system includes a division of labour for the scholar, in which it is arranged that a limited time shall be devoted to book learning, a limited time to physical work, and a limited time, when that can be effected, to games or other exercises which afford pleasure to the mind.

The mode in which this reform originated is so useful a study, and so truly interesting from an historical point of view, that I shall devote the present chapter to a description of it, following, in the narrative, the author's own words as far as is compatible with the necessary condensation.

In 1833 Mr. Chadwick was appointed one of a Central Commission to examine into the condition of the labour of children and of young persons employed in factories. The commissioners found generally that the children were worked during the same stages as adults,—eleven, twelve, or more hours daily, and they condemned this practice as being economically as wasteful as it would be, on a farm, to work

young colts to the same extent as adult horses. They pronounced that six hours of daily labour was as long as could be allowed for young children without permanent bodily injury, and that manufacturers continuing to enforce work during those long hours must do so with double sets of children, six hours each set. The ordinary condition of long-time labour in factories had practically excluded the children from the benefits of education; so that a population had been growing up, deteriorated morally as well as physically by excess of labour. Physically the effects of excessive hours of labour were aggravated by the bad sanitary conditions of ill-ventilated and ill-drained workshops, and ill-drained and ill-ventilated dwellings; while the economical results, waste of working force, were such as would be the case if the farmer, to obtain one working horse, had to raise two colts, or as if the adult working horse, when raised, lasted only two-thirds of the productive time that would be obtained under better sanitary conditions.

It fell to the author to work out a bill providing for the organisation of executive machinery for the application of the principles which were adopted by the Commission, and the provision which he proposed for the protection of the working population against exclusion from education was, that it should be a condition of the employment of children by the manufacturer, that every child so employed should produce a certificate from a competent teacher in a fitting school, certifying that the child had been under instruction three hours every working day during the week preceding. Three hours a day was half the time then generally occupied in the working schools. Hence the name half-school timers.

His colleagues of the Commission agreed in declaring, upon adequate medical testimony, that even ten hours' daily continuous labour for little children, as implied in a ten hours' bill, was too long, and proposed, as a compromise, a limitation to eight. But being individually charged by the Government with the preparation of the bill, he inserted provisions for a limitation of children's labour to six hours, and it was really a six hours' bill which was carried through the House of Commons, together with the condition of employment that every child employed should be three hours a day under a competent school teacher, with a rating clause for providing sufficient schools and school teachers where none were found to exist.

The three hours or half-school time provision was intended not solely as a security for education, which his own educational information and superior testimony enabled him then to say was as much time as could be occupied profitably with any subject-matters of instruction with very young children, but as a primary security against over-work. He reasoned that if he secured their presence in school for three hours, he prevented their presence for that time in the workshop, and cut off that amount of time from any adult stage of work to which they would otherwise be subjected. The three hours' compulsory attendance at school, even where the teaching was inferior or nominal, soon proved successful as a preventive of bodily overwork. The effect was, as medical officers attested, a better growth, and also a better quality of labour during the reduced hours—as employers admitted. The securities for the competency of the school teaching, and the rating

clauses, having been thrown out in the House of Lords, the education was often extensively nominal, illusory, and often fraudulent. But where, by voluntary exertions, the half school-time teaching was provided of a proper quality, as by intelligent manufacturers, such as the Messrs. Walker of Bradford, Mr. Ackroyd, the Messrs. Ashworth of Bolton, Mr. Bazley of Manchester, the Messrs. Chadwick of Rochdale, the Messrs. Birley of Manchester; or where there were schools under trained masters to whom the "half-timers" were sent, as at Oldham, Rochdale, Manchester, and elsewhere; or where, as in the Poor Law district schools, the half-time system was carried out,—there was testimony, from experienced school teachers, of practical results which affected the whole of the prevalent practice of infantile and juvenile training and education.

The experience of the short school-time district industrial schools was demonstrative of a general conclusion, that by the administrative division of educational labour the elements of popular education, reading well, with some skill in parsing, writing a fair hand, spelling well, arithmetic up to decimal fractions, the naval and military drill, and vocal music, might be taught well together, with the elements of religious instruction, in about one-half the time before commonly occupied in teaching indifferently the three elementary branches, as they are considered, of a popular education.

It was found that, beginning with the infant school, these courses of mental and bodily accomplishments might generally be completed soon after the tenth year; whereas, under the previous practice, school-attendance was required until the thirteenth year for

the communication of an inferior amount of book instruction alone. The practicability of the reduction by one-half of the ordinary period of teaching was established by the evidence of the most successful school teachers.

The gain in time, from six or five to three hours daily school-attendance, and from six to three years, —half the term commonly occupied,—was not the sole nor the most important gain achieved in the large, separate schools by the division of educational labour, and the application of the half-time principle. A boy who acquired the same amount of knowledge in one-half the time of another boy, obtained a proportionately superior habit of mental activity. This was soon the experience stated, in good half-time school districts, by employers of labour, who ceased to employ "long-timers" where they could get the "short-timers"; and this quality of superior mental alertness, combined with the bodily aptitudes created by previous drill, gave the comparatively stunted pauper boys of the towns the preference over the strong robust lads from the coast.

The division of educational labour by trained teachers in the district schools and in the larger public schools, founded on the same principles, surpassed, as might be expected, all small schools in which the common elementary instruction for the middle class prevailed and, indeed, the instruction in the older schools for higher classes also.

Next to the gain in time by the division of educational labour, in the system exemplified in the district school, was the gain in pecuniary economy.

By means of a staff of qualified permanent paid officers and a division of labour, with gradations of

administrative superintendence in each Poor Law Union, there was effected an average yearly economy of upwards of two millions; and if the principles which were laid down had been adopted by Parliament, with some additional outlay for qualified paid service, the economy might have been carried to between three and four millions per annum upon the previous expenditure of the unpaid overseer, or the single paid officer—the assistant overseer. Thus it was proved in the instance of the district schools, that by means of an educational division of labour on the administrative principle suggested by a staff of school teachers, comprising, in the best instances, the services of a principal with those of a chaplain, a head master at about £200 per annum, first and second assistant masters, and a staff of pupil teachers, drill masters, and drawing masters, an economy of fully one-half was effected against the single master —even though he were a trained master—teaching on a small scale. The expense of the educational power of the trained staff was, on the average, in the district schools, £1 per head per annum.

CHAPTER IV.

THE PHYSIOLOGICAL LIMITS OF MENTAL LABOUR.

THE reasons for the suggestion of the half-time system of education and the grounds for its success were thought out long before they were acted upon, and were afterwards described, in 1860, by their author himself, in words short, explicit, and admitting of no condensation. I propose, therefore, in the present chapter to quote him verbatim on the subject now before us:—

"The business of education still requires for its successful prosecution scientific observation, and the study of the subject to be operated upon—the human mind. Even to empirical observation it should have suggested itself that the mind has conditions of growth which are required to be carefully noted, to adapt the amount of instruction intended to be given to the power of receiving it. It is a psychological law that the capacity of attention grows with the body, and that at all stages of bodily growth the capacity is increased by the skilful teacher's cultivation. Very young children can only receive lessons of one or two minutes' length. With increasing growth and cultivation, their capacity of attention is increased to five minutes; then to ten, and at from

five to seven years of age, to fifteen minutes. With growth and cultivation, by the tenth year a bright voluntary attention may be got to a lesson of twenty minutes; at about twelve years of age to twenty-five minutes; and from thence to fifteen years of age, about half an hour: that is to say, of lessons requiring mental effort, as arithmetic, not carried beyond the point at which the mind is fatigued, with the average of children and with good teaching. By very skilful teachers and with very interesting lessons, the attention may be sustained for longer periods; but it is declared by skilled observers that prolonged attention beyond average limits is generally at the expense of succeeding lessons.

"The preponderant testimony which has been received in the course of some enquiries into educational subjects, is that with children of about the average age of ten, or eleven, or a little more, the capacity of bright voluntary attention, which is the only profitable attention, is exhausted by four varied lessons to subjects and exercises requiring mental effort of half an hour each in the forenoon, even with intervals of relief. After the mid-day meal the capacity of voluntary attention is generally reduced by one-half, and not more than two half-hour lessons requiring mental effort can be given with profit.

"The capacity of attention is found to be greater in cold weather than in hot, in winter than in summer.

"I collect that the good ventilation, lighting, and warming of a schoolroom will augment the capacity of attention of the pupils by at least one-fifth, as compared with that of the children taught in schoolrooms of the common construction.

"I also collect, that the capacity of attention varies with bodily strength and weakness. It is reported to me that school-boys, of nearly the same ages and conditions, of the same school-rooms, and under the same tuition, being weighed, and divided into two classes, the light and the heavy, the attainments, as denoted by the number of marks obtained, were found to be the greatest with the heaviest, that is to say, those of the greatest health and bodily strength.

"These were chiefly town-born children, of common habits. The robust children of rural districts, of less cultivated habits of attention, are found to be slower in receiving ideas; but with cultivation they are brought up to equal capacities of attention, and to greater retentiveness of the matter taught, than the common classes of town-born children.

"There are differences in the capacities of attention in different races, or in the habits of attention created previously to the school-period by parents of different races. The teacher of a large school in Lancashire, who had acted as a school-teacher in the southern counties, rated the capacity of attention of the native Lancashire children as five to four, as compared with those in Norfolk. In other instances the differences were wider.

"Experienced teachers have testified to me that they can and do exhaust the capacity of attention, to lessons requiring mental effort, of the great average of children attending the primary schools in England, in less than three hours of daily book instruction, namely, two hours in the morning, and one hour after the mid-day meal.

"Infants are kept in school, and the teacher is occupied in amusing and instructing them, for five

or six hours, but the duration of mental effort in the aggregate bears only a short proportion to the whole time during which they are kept together. So in schools for children of more advanced ages. Even the smaller amount of mental effort in infant schools is extremely subject to dangerous excess. I am assured by a teacher in the first infant school established in Scotland, that he did not know a pre-eminently sharp child who had in after life been mentally distinguished.

"In common schools, on the small scale, the children will frequently be not more than one-half the time under actual tuition; and in schools deemed good, often one-third of their time is wasted in changes of lessons, writing, and operations which do not exercise, but rather impair the receptive faculty.

"It may be stated generally that the psychological limits of the capacity of attention and of profitable mental labour is about one-half the common school-time of children, and that beyond that limit instruction is profitless.

"This I establish in this way. Under the Factories Act, whilst much of the instruction is of an inferior character and effect, from the frustration of the provisions of the original bill, there are now numerous voluntary schools, in which the instruction is efficient. The limit of the time of instruction required by the statute in these half-time schools for factory children is three hours of daily school teaching, the common average being six in summer and five in winter. There are also pauper district industrial schools, where the same hours, three daily, or eighteen in the week, or the half-time instruction, are prescribed; which regulation is, in some instances,

carried out on alternate days of school teaching and on alternate days of industrial occupation. Throughout the country there are now mixed schools, where the girls are employed a part of the day in needlework, and part of the day in book instruction.

"The testimony of school inspectors and of school teachers alike indicates that the girls fully equal in book attainments the boys who are occupied during the whole day in book instruction. The preponderant testimony is that in the same schools, where the half-time factory pupils are instructed with the full-time day scholars, the book attainments of the half-time scholars are fully equal to those of the full-time scholars, *i.e.*, the three hours' are as productive as the six hours' mental labour daily. The like results are obtained in the district pauper schools.

"In one large establishment, containing about six hundred children, half girls and half boys, the means of industrial occupation were gained for the girls before any were obtained for the boys. The girls were, therefore, put upon half-time tuition, that is to say, their time of book instruction was reduced from thirty-six hours to eighteen hours per week, given on the three alternate days of their industrial occupation, the boys remaining at full school-time of thirty-six per week—the teaching being the same, on the same system and by the same teachers, with the same school attendance in weeks and years, in both cases.

"On the periodical examination of this school, surprise was expressed by the inspectors at finding how much more alert, mentally, the girls were than the boys, and how much advanced in book attainments. Subsequently industrial occupation was found for the

boys, when their time of book instruction was reduced from thirty-six hours a week to eighteen; and after a while the boys were proved upon examination to have obtained their previous relative position, which was in advance of the girls. The chief circumstances effecting this result, as respects the boys, were the introduction of active bodily exercises, the naval and the military drill, and the reduction of the duration of the school teaching to within what appear to me to be the psychological limits of the capacity of voluntary attention.

"When book instruction is given under circumstances combining bodily with mental exercises, not only are the book attainments of the half-time scholars proved to be more than equal to those of the full-time scholars, but their aptitudes for applying them are superior, and they are preferred by employers for their superior alertness and efficiency.

"In the common course of book instruction, and in the average of small but well managed long-time schools, children, after leaving an infant school, are occupied on the average six years in learning to read and write and spell fairly, and in acquiring proficiency in arithmetic up to decimal fractions. In the larger half-time schools, with a subdivision of educational labour, the same elementary branches of instruction are taught better in three years, and at about half the annual expense for superior educational power.

"The general results stated have been collected from the experience during a period of from twelve to fifteen years of schools comprising altogether between ten and twelve thousand pupils. From such experience it appears that the general average school time is in excess full double of the *psychological*

limits of the capacities of the average of children for lessons requiring mental effort.

"I have not hitherto been enabled to carry my inquiries to any sufficient extent for a statement of particular results, to the schools for children or youth of the higher ages, but I believe it will be found that the school and collegiate requirements are everywhere more or less in excess of psychological limits. I gather that the average study, in continuous mental labour, of successful prizemen at the universities is from five hours and a half to little more than six hours of close mental study or exertion from day to day. An able Oxford examiner informs me, that if he ever hears that some one is coming up for examination who has been reading twelve or thirteen hours a day, he is accustomed to exclaim, 'That man will be plucked!' and during his experience of thirteen years as an examiner at Oxford, he has never known an instance to the contrary. In respect to the mental labour of adults, it is observed by Sir Benjamin Brodie, in his 'Psychological Inquiries.'—'A man in a profession may be engaged in professional matters for twelve or thirteen hours daily, and suffer no very great inconvenience beyond that which may be traced to bodily fatigue. The greater part of what he has to do (at least it is so after a certain amount of experience) is nearly the same as that which he has done many times before, and becomes almost matter of course. He uses not only his previous knowledge of facts, or his simple experience, but his previous thoughts, and the conclusions at which he had arrived formerly; and it is only at intervals that he is called upon to make any considerable mental exertion. But at every step in

the composition of his philosophical works Lord Bacon had to think, and no one can be engaged in that which requires a sustained effort of thought for more than a very limited portion of the twenty-four hours.

"'But great things are accomplished more frequently by moderate efforts persevered in with intervals of relaxation during a very long period. I have been informed that Cuvier was usually engaged for seven hours daily in his scientific researches; but these were not of a nature to require continuous thought. Sir Walter Scott, if my recollection be accurate, describes himself as having devoted about six hours daily to literary composition, and his mind was then in a state to enjoy some lighter pursuit afterwards. After his misfortunes, however, he allowed himself no relaxation, and there can be little doubt that this over-exertion contributed as much as the moral suffering which he endured to the production of the disease of the brain, which ultimately caused his death. Sir David Wilkie found that he was exhausted, if employed in his peculiar line of art for more than four or five hours daily; and it is probable that it was to relieve himself from the effects of too great labour that he turned to the easier occupation of portrait-painting. In fact, even among the higher grades of mind there are but a few that are capable of sustained thought, repeated day after day, for a much longer period than this.'

"Sir Benjamin Brodie once stated to me that he subsequently ascertained that in the above passage he had rather exceeded the limits of the mental labour of Sir Walter Scott, who, in a conversation on the topic, in the presence of Sir Charles Lyell and

Mr. Lockhart, had declared that he worked for three hours with pleasure, but that beyond about four hours he worked with pain. Sir Benjamin stated to me that he was of opinion 'that for young children three or four hours'' occupation in school must be even more than sufficient, and that they would be found in the end to have made greater progress, if their exertions were thus limited, than if they were continued for a longer period.

"In large public establishments in which I have had an executive direction, I have not found it practicable to sustain, on the average, for longer than six hours per diem, from day to day, continuous and steady mental labour on the part of adults.

"I find ground for the belief that as more and more of mental effort and skill is required in the exercise of the manual arts, the hours of work must be more and more reduced for the attainments of the best economical results without waste of the bodily power."

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"'First, let me observe upon the very young of our species, their mobility at the periods of growth, particularly in infancy,—their constant changes of bodily position, when free to change,—their incessant desire for muscular exertion,—their changes, short at first, longer as growth advances,—these changes being excited by quickly varying objects of mental attention, and forming incessantly varying alternations of exertion and repose, with manifestations of pleasure when allowed free scope for them, of pain when long restrained. Now to what physiological conditions do these alternations of exertion and repose subserve?

"'When obstructed and subjected to constraints for long periods, and when pain and mental irritation and resistance are excited amongst *classes*, are not the pain and resistance to be taken as a remonstrance of nature against a violation of its laws?

"'The theory of the common practice of school instruction is of five and as much as six hours' quietude, and for intervals of three hours each perfect muscular inactivity and stillness of very young and growing children from seven to ten years old, and during this constrained muscular inactivity, continuous mental attention and labour.

"'To ensure these conditions of continued bodily inactivity and prolonged mental labour, the common office of the schoolmaster is everywhere a war for the repression of resistances and incipient rebellions. But are not these resistances excited by nature herself? Are not desk cutting, whittling with knives, mischief, conditions of irritability, manifestations of excessive constraints against physiology? If the conditions of muscular inactivity were completely enforced, what

does physiology tell us may be expected from these restraints? I might ask you, indeed, whether much of the insanitary conditions of our juvenile and very young populations are not consequences following from them?

"'First, there is the proverbial pale-facedness of the young scholar, and the lower bodily condition of those who are subject to the confinement of schools, even of the best construction and ventilation, than of those, who, free from confinement and at large, are at liberty to follow natural instincts.

"'When the weakly fail in health in a marked degree under the restraints of the school, the remedy is restoration to natural freedom, which commonly leads to improved health. I cannot but attribute to the lowering of the system and bodily debility produced by this excessive school restraint (even where there is good ventilation), and the consequent exposure to epidemic conditions and other passing causes of disease, a large share of our juvenile mortality, especially between seven and ten years of age, when the opportunities of retrieving the effects of the school constraints by athletic exercises are less than at later periods.

"'But the constraints of a school are accomplished most fully in girls' schools, more especially in boarding schools, where the sedentary application of young children is extended to eight hours daily, and diseases are attendant upon them, which I cannot help ascribing largely to violations of the laws of physiology. In Manchester, with the increase of prosperity, an increased proportion of females have been sent to boarding schools and high class schools with long hours; and I am assured by Mr. Roberton,

who is especially conversant with the diseases of females, that the proportion of the mothers of the middle class who cannot suckle their own children is increasing. He has shown me statistically that, with all the care bestowed upon females who have been so highly educated, the failures, and deaths in child-birth, are full sevenfold greater than amongst females of a lower condition in life, who have had less school restraint and sedentary application, and more freedom and muscular development in childhood. Cases of spinal distortion, nervous disorder, nervous mania, and hysteria, prevail peculiarly amongst the middle and higher class of females, whose education has been of prolonged sedentary occupation, even under the best sanitary conditions in other respects. As applied to them, it is a proverbial observation that "ailing mothers make moaning children." A lady who was eminent as a boarding-school teacher, but who has retired from business, has observed painful evidence of the injury done by the prolonged hours of sedentary application which custom and the demands of parents require, and she confirms the experience of the best half-time schools, that better instruction might be given in shorter hours. I have received a body of evidence from able teachers, that they can and do exhaust the capacity of attention to book instruction in half the time for which sustained attention to such instruction and bodily inactivity is demanded by custom.

"'But what I seek is the sanction of your opinion as to whether, if the laws of physiology be duly consulted for providing a sound body for a sound mind, other treatment is needed than that which prevails in schools, of requiring five or six hours of sedentary

occupation for children in the infantile stage, and seven or eight for those in the juvenile stage? I appeal to you more particularly from the fact, that in lectures and papers the teaching of physiology is insisted upon as an additional element of popular education, and an additional demand of time in those schools, the whole condition and theory and attempted practice of which, though not yet so recognized generally by professors of the science, appears to me to be a large violation of it, and an offence against infantile nature. "'Yours ever,

"'E. CHADWICK.'

"'MY DEAR CHADWICK,—I have perused and carefully considered every point in the inquiry which you have addressed to me, and I concur completely with your belief in the agreement with nature of the changes you recommend in the distribution and change of the periods devoted to school restraint and studies, and to bodily exercise and relaxation.

"'All the nutritive functions and actions of growth proceed more vigorously and rapidly in childhood and youth than in mature life,—not merely as regards the solids and ordinary fluids, but also in the production of those imponderable and interchangeable forces which have sometimes been personified as "nervous fluid," "muscular force," etc. Using the latter term to exemplify my meaning, the excess of nervous force is in the child most naturally and healthily reduced by its conversion into muscular force; and at very short intervals, during the active or waking period of life, the child instinctively uses its muscles, and relieves the brain and nerves of their accumulated force, which passes, by the in-

termediate contraction of the muscular fibre, into ordinary force or motion, exemplified by the child's own movements, and by those of some object or other which has attracted its attention.

"'The tissues of the growing organs, brain, muscles, etc., are, at this period of life, too soft to bear a long continuance of their proper actions; their fibres have not attained their mature tone and firmness; this is more especially the case with the brain-fibre. The direct action of the brain, as in the mental application to learning, soon tires; if it be too long continued, the tissues are unhealthily affected; the due progress of growth, which should have resulted in a fibre fit for good and continuous labour at maturity, is interfered with; the child, as an intellectual instrument, is to that extent spoiled by an error in the process by which that instrument was sought to be improved.

"'The same effect on the muscular system is exemplified in the racers that are now trained to run, at $2\frac{1}{2}$ or 3 years old, for the grand prizes at Doncaster or Epsom. The winner of the "Derby" never becomes an "Eclipse" or "Flying Childers," because the muscular system has been overwrought two or three years before it could have arrived at its full development, which development is stopped by the premature over-exertion.

"'If the brain be not stimulated to work, but is allowed to rest; and if, at the same time, the muscles be forbiddden to act, there then arises, if this restraint be too prolonged, an overcharged state of the nervous system. It is such a state as we see exemplified in the caged quadruped of active habits, when it seeks to relieve it by converting the nervous into the

muscular force to the extent permitted by its prison, either executing a succession of bounds against the prison-bars, like the agile leopard, or stalking, like the lion, sullenly to and fro.

"'If the active child be too long prevented from gratifying the instinctive impulse to put in motion its limbs or body, the nervous system becomes overcharged, and the relief may at last be got by violent emotions or acts, called "passion" or "naughtiness," ending in the fit of crying and flood of tears.

"'But all these impediments to a healthy development of the nervous system might be obviated by regulations, based on the system which you rightly advocate, providing for more frequent alternations of labour and rest, of study and play, of mental exertion and muscular exercise; in other words, by briefer and more frequent periods allotted to those phases of educational procedure, and modified to suit two or three divisions of the scholars, according to age.

"'The powers and workings of the human frame concerned in the complex acts and influences, which you have asked me to explain physiologically, are amongst the most recondite and difficult in our science. You will, therefore, comprehend and excuse my short-comings in trying to fulfil your wish. But, on the main point, I have no doubt that your aim is in close accordance with the nature of the delicate and, for good or evil, easily impressible organization of the child.

"'Believe me, ever truly yours,

"'RICHARD OWEN.'

"It is difficult to separate distinctly the evils arising from the excess of simple bodily inactivity, from

the results of the common insanitary conditions of schools—bad ventilation, bad lighting, bad warming, and overcrowding. These, however, are attended by epidemic and eruptive diseases, which ravage the infantile community. Simple constraint appears to be attended by enervation and obstructed functions, and thence maladies of another class. The preventive of these is the occupation of children, with means of physical training, with systematized gymnastics, including swimming, and the naval and military drill. Where there have been good approximations to the proper physiological as well as the psychological conditions, as in the half-time industrial district schools, epidemic diseases have been banished, and the rate of mortality reduced to one-third of that which prevails amongst the general community in England and Wales alone, where upwards of a quarter of a million of children are annually swept away from preventible disease, which enervates those who survive. Four labourers, who have had the advantage of this improved physical and mental training are proved to be as efficient as five or more of those who have not. I am prepared to show that by administrative improvements in the application of the principles in question, double the population may be physically and mentally trained well, at the expense of educating the existing numbers ill."

CHAPTER VI.

EDUCATION AND DRILL.

IN order to systematise, as far as possible, physical with mental educational training, our author, very early in the course of his efforts, suggested the combination of naval military drill as a part of his educational project. ve before me the outlines of this design in a letter rospectus printed for general circulation in the nning of this suggested reformation. This is so plete as a general plan, it is best to let it stand re.

"EDUCATION.

HEADS OF A PAPER on the expediency of measures reducing the hours of instruction and for the ral introduction of the Naval and Military Drill matised as gymnastic exercise, as parts of any nal system of education.

The subject may be considered with exclusive ence either, first, to the future personal welfare ie individual pupil, on the assumption that his re career will be entirely in civil life; or, secondly, ie interests of the nation.

In regard to the first topic, the welfare of the l in civil life, the case may be established by tical evidence.

"It is proved from the daily experience of what is called the half-time system, and of well conducted schools where the drill is already introduced in combination with industrial training, that the tuition during the reduced hours of book instruction is at least as effective as in schools where the full time is exclusively occupied in book instruction.

"It is proved that the hours of sedentary occupation in schools are generally prolonged beyond the capacity of the pupils for profitable attention, and that with a view to mental as well as bodily improvement they must be reduced.

"It is proved that for occupation of the hours taken from book instruction, drill should be selected, on these several grounds.

"1. *Sanitary or Bodily.*—Because the drill is good (and for defective constitutions requisite) for correction of congenital bodily defects and taints, with which the young of a very large proportion of the population, especially the young of the poorer town populations, are affected; and, that the climbing of masts and other operations of the naval drill are valuable additions to the gymnastic exercises of the drill, and when properly taught are greatly liked by boys.

"2. *Moral.*—For giving an early initiation to all that is implied in the term discipline, viz. :—

DUTY.
ORDER.
OBEDIENCE TO COMMAND.
SELF-RESTRAINT.
PUNCTUALITY.
PATIENCE.

"3. *Economical.*—Because it is proved that drill, when properly conducted, by giving suppleness to the joints,—renders the action prompt as well as easy, and by giving promptitude in concurrent and punctual action with others, adds, at a trifling expense, to the efficiency and productive value of pupils as labourers or as foremen in after life.

"On the second chief topic, namely, the interest of the nation, the general introduction of the drill is called for, and will be of the same use as it was of old in the parochial training to the use of the bow. On practical evidence of officers engaged in the drill, it is shown :—

"1. That the drill is more effectively and permanently taught in the infantile and juvenile stages than in the adolescent or adult stages.

"2. That at school it may be taught most economically, as not interfering with productive labour, and that thirty or forty boys may be taught the naval and military drill at one penny farthing per week per head as cheaply as one man, and the whole juvenile population may be drilled completely in the juvenile stage as economically as the small part of it now taught imperfectly on recruiting or in the adult stage; and that for teaching the drill the services of retired drill serjeants and naval as well as military officers and pensioners may be had economically in every part of the country.

"3. That the middle and higher class schools should have, in addition to the foot drill, the cavalry drill, which the parents of that class of pupils may afford.

"4. That the drill, when made generally prevalent (without superseding), will eventually accomplish in

a wider and better manner the objects of Volunteer Corps and of Yeomanry, which as interrupting productive occupations now becoming more absorbing, is highly expensive, rendering all volunteer forces small, dependent on fitful zeal, and ineffective. The juvenile drill, if made general, will accomplish better the objects even of the Militia. The juvenile drill will abate diffidence in military efficiency, and will spread a wide predisposition to a better order of recruitment for the public service; will tend to the improvement of the ranks of the regular force, whether naval or military; and will produce an immensely stronger and cheaper defensive force than the means at present in use, or in view.

"5. And finally, that the means of producing this defensive force, instead of being an expense, will be a gain to the productive power and value of the labour of the country."

Other Uses of Drill.

The use of the military drill in schools was pressed partly to obtain some physical training for the children, as well as for the cultivation in them of habits of discipline, patience, self-restraint, prompt obedience to command, and concerted action. The non-commissioned officers of the army were employed for the purpose of teaching, and an allowance for drill having been obtained from the Education Department, the drill has been established in about a thousand schools, with a reported good effect on the mental discipline of the schools which was fully equal to what was anticipated. In the district half-time schools there were added to the physical exercises of the drill, when age permitted, the naval

drill on the masts, swimming, and the exercises of the hand and arm in carpenter's work, shoe-making, tailoring, and gardening, and in some instances, the use of the steam engine. For the girls the laundry work and baking were introduced. To the common military drill for the army, the skilled trainer Mr. Maclaren, of Oxford, added a considerable number of useful and practical exercises. For children various exercises have been added, with music and freehand drawing, making the course of schooling a course of pleasure.

The experienced economical result of this course of training in the half-time schools on the lowest types of children has been to give to two the efficiency of three for productive industry; to make the boys competent to earn three shillings a day of wages, or more, instead of two from the ordinary labour; to elicit intelligence and skill for the application of labour-saving machinery, and the cheapening of the cost of production.

In civil service, especially in sanitary service, our author was much mixed up with officers of the scientific corps, officers of the Royal Engineers and Artillery and of the Royal Navy; Field-Marshal Sir John Burgoyne, Sir F. Head, and later on with General Gordon, with whom he was led to discuss many economical questions. He ascertained, as the experience of the School of Musketry, that only a low average of shooting was to be got from the common rank and file as now enlisted; that a better average was got from the non-commissioned officers, and a better average still from the commissioned officers; in short, the skill in shooting rises, he found, with the intelligence. The best shooting

was with the corps of sappers and miners, which is composed of skilled men who receive higher pay; and it was evident that the whole corps was, results considered, as cheap a corps as any in the line. The police force is a corps of men with a fair elementary education, who learn the drill better in a quarter of the time of the ordinary rank and file of the army. "I estimate," said he to Colonel Sir E. Henderson, the chief of the Metropolitan force, "two regiments of your police as equal to three regiments of the Guards." "You do us injustice," said the Colonel, "we are worth more than that. I say that, results considered, notwithstanding the higher pay, the police force is the cheapest force in the country." This result of improved education was not disputed, whilst the general economical conclusion was that the mixed physical and mental training of children would add one-third to the civil force of the country, and more than one-third to its military power.

In a paper which he read at the United Service Institution on this topic, he cited evidence to show that if ships were worked with men selected for their intelligence they might be worked more safely with one-third less of force. He carried the investigation farther, to show that by the application of these conclusions a considerable reduction might be effected in the expenditure on military force. This information went decidedly against long barrack detention, which, without occupation, or with only sham occupation, did not improve, but diminished discipline. And in a speech he made on the subject at the Society of Arts, he supported Sir Henry Coles' proposition in favour of a volunteer force like that of Switzerland, but with amendments.

His proposition was that as much as possible of military drill should be transferred from the productive juvenile or adult age to the non-productive infantile or school age; that after that time encouragement should be given for volunteer exercises in the use of weapons, on afternoons, in the cadet stage, and after that further encouragement should be given for military exercises in the adult stages. He ascertained, on good military authority, that an average of one hundred hours of exercise in the year would suffice for a person to acquire and maintain skill in the use of the rifle. He proposed to get this by a double pay, or the day's pay of the policeman, for two hours of exercise on the Saturday, enlisting men on the condition that in case of a serious war they would join colours, and for the time go on foreign service.

Remembering the axiom of Napoleon, that "in military service, whilst physique is as one, morale is as two;" seeing that in volunteer competitions the fast and the intemperates always went down before the temperates, he would only enlist for this volunteer service men of good moral character, would admit no convicted drunkards, no uncertificated bankrupts, still less ticket-of-leave men, such as are found in the ranks of the army. The uniform of the volunteers would thus be a certificate of moral conduct and trustworthiness for civil work and social position. On inquiry amongst the volunteer corps he was assured that on such conditions a double number of volunteers might be obtained, and a more efficient force than had been seen on the battle-field since the time of Cromwell's Ironsides, for India and the colonies. This improved quality of force would be

obtainable at a greatly reduced expense, if one day's double pay were given as against the seven days half-day's pay. It would work out altogether at about half the existing army expenses, including a fortnight or three weeks' exercises—required by Sir John Burgoyne—as an acceptable "outing" for those who could be spared.

Sir Joseph Whitworth, an ally of our author in sanitation, was led to examine the economy of small arms and its effect on war; as of his small three or four-pounder gun, which, with a shell that opened with the fire of a company, had with a covered fire a range of five miles. "What would I not have done with such an arm," said Lord Clyde, "if I had had it in India." Other implements are now being introduced by mechanists which will require thoroughly skilled and educated force to wield them. There is the improved Gatling, and there is an invention, the Maxim gun, which promises to give the fire of a whole battalion. "Dieu aime les gros bataillons" was the French maxim; but he loves them no longer. The great battalions, even our own squares, will all dissipate under the new machine guns, and the whole of the military tactics will have to be altered to an extent which baffles the old tacticians. The battle will be decided by science, skill, and capital; in other words, by the new education.

CHAPTER VII.

EDUCATION OF THE YOUNG FOR MILITARY SERVICE.

TO promote the system of physical training in combination with mental education for the army is one of the most striking efforts in the labours of our author. In the last chapter we had a glance at this fact, but what was there said was the barest outline of the argument which has been in various essays wrought out. In an address delivered before the Social Science Association on February 1st, 1867, the expediency of the introduction of the military drill and of the naval exercises in the school stages of the elementary school, and of the employment of soldiers on civil works in time of peace, was freely developed and expounded. The address itself is so clear and forcible I shall select from it the more important of its passages which bear no condensation, and shall present them in the first person as they were spoken by the author himself.

"The principle of the chief measure which I have to propose is an old one, involved in the old practice of the kingdom, when every local community, every parish as well as burgh, was required to exercise the whole male population, beginning with the very

young, in military exercises and the use of the bow. I propose to change the commencement of military exercises from the productive adult to the non-productive juvenile, or to the earliest of the school stages,—and to provide that, in all the elementary schools throughout the kingdom, aided by the State, the boys shall be trained in the military exercises and appropriate gymnastics. I may support this proposition by the evidence of the results obtained by long and practical experience in elementary schools in different parts of the country, and by the testimony of intelligent non-commissioned officers who have been engaged in training recruits. These officers all agree that the earlier they begin this training the better they succeed; that they do in infancy what is difficult to do at a more advanced age, and what they cannot do at all with many men in the adult stages. In the infantile or school stage, we have, as material, to bend the tender twig; in the juvenile stage, we have to straighten the crooked stick; and, in the adult stage, we have often to reform the gnarled oak. The open-air exercises of the drill-master, when properly managed, are greatly preferred by boys to the desk-work of the school-master.

"In the district schools or orphan asylums where it has been applied, and I more particularly allude to the Children's Institution at Stepney, where the military and naval drill have been long combined with great advantage—and where they are left to themselves to choose their occupations—full sixty per cent. volunteer for the royal service; about one-half of the sixty per cent. for the army, and one-half for the navy. It is common for the trained lad,

when he joins the army, to be asked by the non-commissioned officers, who observe his ready movement, 'from what regiment he has come;' and when he says that he has been in no regiment at all, to be told bluntly that he is lying, and that he is a deserter:—since it is not in the corporal's conception that such good drill could have been acquired except in a regiment.

"As to the expense of each species of drill, the services of one drill-master, that of a pensioner, usually are found to suffice for as many as five hundred boys. It takes about three months to finish a lad off well in the rudimentary military drill, at a rate of a penny per week, or a shilling per head for three months' training required for the military drill. It would, however, be worth while to improve these exercises by introducing special gymnastics; but as the military drill is at present conducted, it may be stated that about fifty lads may be got well through the military drill in the juvenile stage, at the expense of keeping and drilling one recruit from the plough-tail in the adult stage. If, therefore, by the general adoption of this system the result was only to get two volunteers out of each half hundred so drilled in the infantile stage, or if the time of training several militia men be saved hereafter in the adult stage, the public would be repaid. By the measure I propose the discouragement to volunteering constituted by the drill, which is acknowledged to be very serious by its irksomeness, and the ridicule attached to awkwardness is removed. By removing the drill to the infantile stage, a powerful encouragement is given. The lad, when he has arrived at the time to make his choice

of an occupation, has the temptation of a service for which he is already in a great measure prepared. On the civil side he has the discouragement of having to undergo a training for some handicraft, or a period of apprenticeship; and on the military side, the encouragement of a service for which he believes himself to be quite ready. The practical result is, as might be expected, that a large proportion from well-trained schools do volunteer for the military or the naval service. Considering these conditions, we may be quite sure that the result of the expenditure in the infantile stage will be a highly remunerative and extensive eventual amount of volunteering.

"Assuming that the exercises given in the school stage are made general and thorough, amongst the whole of the population in the school stage, the measure will reduce the time and expense of the drill for the militia, supposing, as has been proposed, that compulsory ballot for the militia should be restored and extended. With the increased disposition to recruitment, it will moreover associate education and an advanced quality of recruitment. Whatsoever may be the military arrangements superinduced—the extension of the militia ballot, a positive conscription for the adult stages—it will be of advantage to have the drill and exercises carried out as thoroughly as possible, and completed as a foundation for them in the school stages. Further, by this early training, besides the predisposition for volunteering for the regular army, we get a population which may be readily put in line for any defensive purposes. If the body of the people were well trained in the school stage, the British people would step out of civil life, and fall

into rank and act together whenever it might be necessary in any part of the globe. I was once present at a discussion with some distinguished military men, when our home force was at the lowest, and when it was assumed that there might be an invasion in a few days. The question was what might possibly be done. One measure proposed was, to impress an army of navvies, and use them to throw up earthworks in the way of the invader; and next to impress all who had game licences, who numbered forty thousand persons, and were presumed to be practised shots, and to line the earthworks with them. But by the measure proposed of the general training of the population, all might be not only placed behind earthworks, but be brought out and wielded in the open with regular troops. What such aptitudes would have been to the civil populations in India will suggest itself for consideration. In China, the clerks in the factories had to be drilled *extempore*.

"But there are considerable advantages in combining naval exercises with the military drill in the same school, by the use of a mast and sails, in the exercising or playgrounds, on which a very large proportion of the naval exercises may be given.

"In the first place, the naval training varies the exercises, and increases the interest in them among the boys; it varies the gymnastics, and adds to the useful physical and mental qualifications imparted. If it be made the foundation of a sea service, the previous training in the military drill is of advantage to the sailor as well as the exercises of seamen are of use to soldiers to enable them to lend a hand for naval service.

"Several years ago, I endeavoured to call attention to some evidence as to the results of military exercises in the half-time or district schools, which received much consideration from some members of the Government, and from many noblemen and gentlemen interested in the volunteer movement, as well as in the military policy of the country. Lord Elcho took the lead in the formation of an association for the promotion of the practice of military drill in the public schools. The object of the association was soon accomplished as respects the chief of those schools, and as part of the volunteer movement; but at that time influential opinion did not carry exertion farther. General Shaw Kennedy, Sir De Lacy Evans, and other distinguished members of the military profession, however, then sanctioned the conclusions from the evidence which I submitted, as to the importance of the general application of the principle to the training of *all* the youth of the country. Since then the evidence which I collected and published has attracted attention in the United States, and has been cited in support of a movement there to get naval and military exercises taught in all the elementary schools. Three governors of New England States have, in their messages, directed the attention of the state legislatures to the subject, and I believe that the principle is in progress of practical adoption there. I have no doubt that it will be found extensively necessary amongst populations of advanced industrial conditions.

"But in connection with the subject it is proper to direct attention to the experience of the special value of military and naval exercises

for the physical training of the population for civil industrial occupations; even if we were to suppose that the British people were to enjoy perpetual peace in the colonies, and in their contact with barbarous nations, as well as at home.

"It is proved that these exercises give a much needed physical, as well as moral, training—a training which adds to their productive power and value for all sorts of civil service. I have obtained the conclusive evidence of large employers of labour, that four drilled labourers are equal in efficiency for ordinary labour to five that are undrilled. But considerable improvement has of late been made in physical training, which adds to the efficiency derived from the old military drill.

"The leader of the improvement in England is Mr. Maclaren, of the gymnastic establishment in Oxford. I have visited the gymnasia at Aldershot and Chatham, where the exercises of his preparation have been introduced, and I have collected the opinions of non-commissioned officers conducting them as to the addition these improvements make to the efficiency of men for ordinary labour. The non-commissioned officers well knew what ordinary labour was, and, at Aldershot, the opinion was that the difference in efficiency was as three to five; at Chatham it was as four to six. I obtained similar evidence in France, from employers of labour there, some of them Englishmen, and the general conclusion was, as stated, viz., that this physical training, in the school stage, will give to three the efficiency of five.

"The naval and the military drill, the practice

of moving together, pulling together, lifting together, develop the capacity for united action, which is as important for civil as it is for military service, and which goes far to make up the gains in efficiency already achieved. To these gains is to be added the important gain from the sanitary element of the prolonged duration of the improved working ability derived from the increased health and strength, by the substitution of out-door exercises for part of the wasted sedentary occupation in schools commonly ill-ventilated and crowded.

"In the civil and economical aspect of the question, it may be perceived, that if we get by the labour of three the produce of five, we get an important surplus produce to compensate the capitalist or the consumer of produce, for the increase of wages, which in my view of the future of our labour market must necessarily be maintained.

"On extensive inquiries of large employers of labour abroad, as well as at home, I have established the fact, that British labour has not hitherto been, as a rule, dear labour; whether it has been made dear with the very high recent advances I cannot say; it probably has in some instances. But, as a general rule, it may be averred that two British labourers or mechanics are equal in efficiency and productive value to three continental labourers—to three Germans, three Swedes, three Danes, or three Normans. If by this efficiency in labour, the food, the clothing and the housing of a third labourer is saved, that is to be regarded as so much capital to be divided as extra wages, or as extra profit to the employer. The effective productive power of

the populations is as three to two. *Tant vaut l'homme, tant vaut la terre.*

"It would need a separate paper to develop the vast economical advantages which shall give to the existing relative superiority an advantage in a proportion of two-fifths. I am compelled to reserve much recent evidence and information, illustrative of the chief propositions submitted, as well as on the means of overcoming some apparent difficulties in details, which I do not overlook.

"If the evidence is re-examined, as I should desire it to be, the conclusion as to the amount of civil advantage to the children by the drill in the earlier stage will be fully established. But there are moral as well as intellectual advantages proved to be derived from the early physical training of children.

"The physical exercise in the military drill is a visible *moral* exercise in all that is implied in the term discipline, viz., duty, obedience to command, order, self-restraint, punctuality, and patience. There is good and bad elementary moral education, as shown by the outcome, and especially by the outcome of the half-time system of education; but the half sedentary or intellectual and dogmatic education, and the half physical, has now been proved to be far more successful than any other system yet known or practised.

"The outlay required to obtain these results might be set down in round numbers at under £100,000 for the military drill alone; but including, at all our seaports, the naval drill, I estimate £150,000 per annum for the physical training of three-quarters of a million of male

children within the school ages would suffice; or if by payments for tested results, about four shillings per head. Now, by this expenditure, an amply-paying number of recruits of an improved quality would certainly be produced in the juvenile stage immediately, as well as eventually in the adult stage, by such domestic events as now induce enlistment.

"In these expenses I include some special provisions for the treatment of those lads who volunteer direct from school, before they may have attained the requisite army standards of size. Such trained boys are found to be of greater aptitude and value than most boys, as messengers; and an increasing amount of intermediate service might be found for them in public as well as private service in that capacity. If a system of telegraphy be connected with the post, as in Belgium, France, and other states, as I hope may soon be done, a considerable number will be required to carry telegraphic messages, for which they might be used until they are of a size to be drafted for the army. So far as relates to one small section of the numbers contemplated—the orphan and destitute children, if the question were left to such local discretion as that of the majority of poor-law guardians, it would not be carried out. The guardians themselves being generally local employers of labour, have reluctantly assented to the introduction of military or naval exercises, and indeed, have often positively resisted them, on the ground that they lead to such an extent of recruiting as to interfere with the local labour market, and that they—the guardians of this or that particular union—are not called upon to provide soldiers for

the government or the country. The general public interests, however, must set aside these narrow views, which are wholly erroneous, even as respects their own labour market: the increased general efficiency of the trained labour more than making up for any reduction in numbers by recruitment. As a compensation for the interests affected by free trade, a large sum of money is annually voted by Parliament in aid of the local rates. I begrudge all such grants in aid of the local rates, for I know that, as administered, the ratepayers derive little benefit from rates in aid. They pauperize, as it were, the local administration. I have no hesitation in declaring that, for the prevention of pauperism, the expenditure proposed would be best applied in the mode I suggest, that is to say—in largely augmenting the efficiency of the labour of the country. As an administrative rule, grants from the public funds should only be allowed to be expended by officers under direct public responsibility. The expenditure for teaching the drill might, I conceive, be fittingly supervised by the Council of Military Education, who have in charge the education and training of the children of the army elementary schools. The council might direct the local organisation of the exercises of the children of neighbouring schools, according to local circumstances. The existing special institutions, such as the school of the Royal Military Asylum at Chelsea, and the naval institutions in which children are kept, might be made model training schools.

"By some persons the proposal to impart military aptitudes to the male children of all the elementary schools receiving public assistance, or virtually to the mass of the juvenile population, was viewed with

distrust, from its possible abuse in times of civil commotion. The answer to the objections made in this feeling might be in one word—Prussia! The security against abuse, such as that apprehended, will however be found in the quality of the intellectual and moral teaching by trained and competent school teachers, in combination with the physical training, the secure result of which admit of direct proof from practical experience, as displayed in evidence already laid before Parliament. A great lesson imparted by military exercises is the importance of subordination, and a rational respect for leadership, by sedulously promoting and enforcing military training in the juvenile stages of the whole population. As described by Bishop Latimer and Roger Ascham, the Plantagenets and the Tudors well knew what they were about. The bishop thus describes our early national practice, in a sermon preached before Edward VI. :—

"'The art of shooting hath been in time past much esteemed in this realm. It is the gift of God that He hath given us to excel all other nations withal; it hath been God's instrument whereby He hath given us many victories against our enemies. . . . In my time my poor father, a yeoman, who had no lands of his own, only he had a farm of three or four pounds by the year, at the uttermost, was as diligent to teach me to shoot as to learn me any other thing; and so I think other men did their children. He taught me how to draw, how to lay my body to the bow, and not to draw with the strength of arms, as the other nations do, but with the strength of body. I had my bows bought according to my age and strength; as I increased in

them so my bows were made bigger and bigger, for men never shoot well unless they be brought up in it. It is a goodly act, a wholesome exercise, much esteemed in physic. In the reverence of God let it be continued.'

"As an economical question, it may be urged that, in augmenting the productive power of the country by improved labour, we may augment the defensive, economical, or money force of the country.

"There is one topic of the recent recommendations of the Royal Commissioners on which I have to submit some observation—namely, that wherein they recommend that the soldiers should be taught some industrial occupations. Now, on this I have to observe that it is proved practically that the physical training in the school stage, giving the use of hands, arms, eyes, and legs, is giving aptitudes for *all* industrial occupations.

"I have no doubt, however, that much may be usefully done in teaching industrial occupations to the men who are untaught; but more, I apprehend, may be done in giving opportunities for the exercise of trades to those who are already taught, who, as returns show, are in large proportions in most regiments.

"In the course of an examination of the poor-law administration in some town parishes, in which cases were presented of claims to relief, either of discharged soldiers or pensioners, or of militia men and their wives and children, I came across one parish marked by the absence of that class of cases. I expressed surprise of the fact of there being no soldiers on the pauper roll, and I asked how that was. The answer was that there were soldiers in the parish, but they

were 'old guardsmen,' who were not paupers but self-supporting labourers. The observations of the parish officer upon this was to this effect:—'You will perhaps know, that in the guards the men were allowed to work, and were let out to do such work as they could find. They became accustomed to work in various ways, and support themselves, and when discharged they did not come upon the parish.'

"My attention was arrested by this fact. I made further enquiries on the subject, and I learned, to my surprise, that the practice had been discontinued, for reasons that appeared to me to be utterly inadequate, viz., that wheeling barrows and doing things of that kind made the men round-shouldered and somewhat spoiled their 'set up' for parades.

"On this, it may be observed, that if it made them round-shouldered it made them strong-shouldered for war. Unless I am misinformed, the corps of sappers and miners, in the musketry exercises and in military efficiency, have been of the first in the army; though on parade they are, perhaps, with heads bent and shoulders bowed by stooping over the work-benches, the worst in their 'set up.' I might adduce much professional testimony to show that, for officers as well as for men, occupations in civil labour in peace augments the aptitudes available for war. It is very generally agreed that the opposite doctrine was disposed of in the pitched battles of the seven weeks' war, and that, in great part by men recently called into the ranks from the plough, the forge, or the desk; in short that it was crushed at Sadowa. In respect to officers, experience in India has proved that those who have been most engaged in civil works or service

in time of peace are the most efficient for war. The costly experience of the severe civil war in the United States showed that success in war in the higher commands depended on scientific training, and its exercise in civil works during peace. Experience drove all the inferior commands to the scientific corps or the 'West Pointers,' and of those almost without a single exception to men who during the peace had been occupied not in the routine of barracks or camps, but in railway work, or one sort or other of civil work or civil service.

"The return of some of the most eminent generals on the confederate side to civil occupations, as also the quick reabsorption of the private soldiers on both sides into productive occupations, are noteworthy phenomena, confirmatory of the policy which I have indicated of the employment of soldiers in civil works in time of peace. By our own excellent volunteer force, it may be anticipated that the like economical results would be obtained. In respect to officers, it was declared before a committee of distinguished officers, of our War Department (when it had been recommended that the engineer officers should be employed on public works of civil construction), by way of illustration, that the late Captain Fowke would be the more efficient for military service by reason of his employment in civil works; more efficient, that is, than if he had been exclusively occupied in 'military duty,' *i.e.*, possibly stationed at some fort on a mud flat, engaged in dreary, weary sentinel work, year after year, without any exercise of his talents, or reasonable prospect of real service, or of relief from a dull barren routine, against which

the best minds revolt. It is a complaint in the French army that the rule which makes an officer quit the service who engages in civil work, deprives the army of the best talents, and leaves to it only the tail of the competition. And the like principle is no doubt applicable to the ranks.

"From an officer in the Swedish army I have obtained particulars, which I submit for closer examination and consideration, as to the systematised letting out of soldiers for civil labour in peace.

"In the cities, especially the seaports, the guard-house is an office for letting out men for civil work of all kinds. If a ship suddenly arrives, and the men are wanted to get out the cargo, the owner or the captain sends to the guard-house for the number he requires. If several are wanted, the corporal will serve as a foreman, or a sergeant's guard may be required, and the sergeant himself will go and act as a foreman, and the work is done and the men get extra pay for it. Loads of wood are received, and soldiers are engaged to cut it up. If a merchant has extra copying work to be done, he can send to the guard-house for men to do it. The government offices, when pressed, get men from the ranks as extra copyists. When dinners or festivals are going on, soldiers are sent for who can be recommended as waiters. Some cavalry men are at times engaged as extra drivers, and to take care of horses. There is always a good supply of spadesmen, and a great force of men, and officers too, are sent to do railway work. Officers and men are employed (as I have contended for railway reform they might be extensively employed in England) as porters, ticket takers, station masters, and railway managers.

Three-fourths of the force was in one way or another very constantly engaged in miscellaneous services, to their own satisfaction and profit, as well as to that of the State and to that of private employers.

"The employment of pensioners as commissionnaires may be referred to as an excellent example of such regimental service for miscellaneous civil employments in towns, as also the occasional liberation of soldiers for harvest work in rural districts. From what I collected of the experience in Sweden, one great advantage of such labour to the employers was that they got a responsible service. If the soldiers misconduct themselves redress is easy, and is given by the officers. On the part of the men, the artisans if labourers in fluctuating occupations, they had the army to fall back upon when work was scarce. In the Royal Hussars, there are tailors and shoemakers, who working at their trades during the greater part of the year, take to the Hussars as a social position, and are well content to fall in at times for exercises. On the side of the army, the practice induces a better order of service. The Swedish army is now admitted to be one of the finest in Europe, and worthy of the followers of Gustavus and of Charles XII. Here, I apprehend, if the practice of employing soldiers in civil work were systematised, it would induce a higher order of recruitment, and it would tend, as it certainly did in the instance of the 'old guards,' to which I have referred, to prevent the disbandment of a military force and the creation of a force of wretched dependent paupers.

"The systematised extension of the practice in our seaports and manufacturing towns, would, I

conceive, be beneficial to the extent that it would diminish the inducement to keep up a wretched class of labourers, hanging about in idleness, in waiting for occasional occupation; at times highly paid, and spending their excessive earnings in drink; and at times in destitution and misery and in dependence, when married, on parochial relief for the support of families.

"The pecuniary economy to the public from the systematised civil employment of soldiers in Sweden is considerable, and it is probable that the greatly reduced cost per head of some armies on the Continent, as compared with the cost in England, may be due in part to this practice. I have been informed of the employment of soldiers in civil works in other continental states; in Austria, as many as twenty thousand at once in railway construction; but it has not been in my way to enquire and inform myself as to the particulars in respect to them. I submit, that it would be an important subject for a responsible and particular enquiry as to the way in which practical difficulties in details are obviated.

"In respect to teaching men industrial occupations and spade-work in the camp, I believe that a great deal may be done in it; and I can speak confidently and with wide practical information as to the sanitary works. I once stated, in a paper submitted to Earl de Grey, the expediency of having the various modes in which sanitary principles have been applied, some successfully and some otherwise, carefully examined, in order that the best civil works should be clearly ascertained and distinguished and set forth in aide-mémoires or practical manuals

for the use of engineer offices, for the better direction of such works at home and in India.

"As productive power and the demand for labour and the prices of labour increase, the abstraction of labour becomes more onerous and injurious. The cost of maintaining, for one year, each of the three millions eight hundred thousand men now kept in the standing armies of Europe, in barracks, in camps and cantonments, would drain and render more productive eight millions of acres of land; or would drain and put into improved sanitary condition the habitations of six millions of families, and reduce their sickness and death-rates by one-third. The year's cost of each regiment would suffice to make one mile of railway. It appears to be an important sign of the times that economical views on this subject seem to be spreading in France, and that the extent of the standing army there is felt to be detrimental to the progress of the country in population and productive power; and so much is this felt, that it appears to be found necessary to reduce the demands for an extended conscription to limits which, if it were confined to adult levies, would be suitable to a defensive rather than an aggressive power. The like reactionary feeling against extended levies and old military policies appears to be gaining ground in Germany.

"A correspondent of distinguished judgment and of wide information in the United States, alleges as against the economical policy of large standing armies, that after all, they of the Northern States, by keeping up only an inconsiderable military force—by leaving the entire adult population free to the development of the productive resources of

the country, by leaving their capital applicable to production undiminished, and their economical power of sustaining a war intact, although they were wholly unaccustomed to arms, were taken by surprise by an organised rebellion of the slave states, where the white population were generally accustomed to the use of arms,—they, after all, came out of their great contest better than we, with our standing army, came out of our long war. He also urged that they would sooner be clear of debt, and, being free of slavery, would be endowed with augmented power of production and wealth, and enabled to purchase, to the greatest extent, the new appliances of war for a people better prepared, by intelligence and early school training, to wield them.

"Be this as it may, and accepting this statement merely as an illustration of the economic principles applicable to this subject,—if the present condition and the probable future of our own labour markets be duly regarded,—I believe that excessive irritation and disappointment will attend any extensive efforts to get by compulsion, or by any extended militia ballot, or by measures of the nature of a conscription, service of the requisite quality, at a lower rate than it may be obtained by volunteering. The end will, I apprehend, be only attained hereafter by a careful consultation, in future arrangements, of the industrial interests of the country. This will, I submit, be the best done on the largest scale by transferring all military exercises and training to the greatest extent practicable to the non-productive, or juvenile, stage of life; and by facilitating and encouraging in the

adult stages the occupation of soldiers everywhere, during time of peace, in productive industry, whether private or public. I submit that we may most befittingly set to other nations an example in this respect, and that we have a common interest with other populations in getting such example followed."

CHAPTER VIII.

EDUCATION FOR THE AGRICULTURAL CLASSES.

A CHAPTER on the education of the agricultural classes forms another part of the work of our author in this department of his public labours. He deals in the present chapter with the primary education of the classes under consideration; the grand point of his argument being that, if the children of agriculturists were grounded in the elements of a fair education, they would be able to do more and better work in a shorter time than if they were left in the ignorance in which, during the greater part of his career, he has been so unhappy as to find them. In the introduction to this study he starts by expressing that the primary education, and the secondary education, needed for the progress of art and science amongst the agricultural classes, involve specialities so distinct from those for the general population, or from the town population, as to require a separate report upon them. And, as a justification of his title for dealing with the question, he mentions that he does so upon much collected experience of school teachers who have testified to wide differences in intelligence in different agricultural districts, accompanied by differences in the value of labour. School teachers in the southern

counties, Hampshire, Buckinghamshire, Sussex; and also in northern counties, Lancashire and Yorkshire, rated the power of learning, or the *receptivity*, of children in the northern counties as three against two in the south. Agriculturists who had worked farms in the north and in the south gave testimony as to similar differences in the intelligence and the efficiency of the labour of the different districts. They had to pay a third more of wages to the Lancashire or the northern labourers, but they got the work as cheaply and more quickly done. Two of the more intelligent northern labourers were found to be equal in efficiency to three southern. Northern agriculturists—Scotch—tempted by the lower rents, have visited southern farms with the view of taking them; but when they have examined the condition of the available labour, they have considered that unfavourable difference to be more than equivalent to the reduced rent, and have declined to take them. The southern labourers had inferior habits of working, which they could not or would not change. Besides requiring three to do the work of two, they required more expensive superintendence, and incurred more expense for repairs in working machinery. An accomplished and improving agriculturist from the north undertook the work of a new sewage farm in the south, but he found he could not do it with the labour there, nor get on until he got his labourers from the north. The northern labourers were, however, still susceptible of improvement by education, and especially by discipline, in early drill and gymnastic exercise.

After stating these facts with some others of a preliminary kind, in which the condition of the

French peasant is compared with the English, and the difficulties the English agriculturist has had to contend with in introducing machinery for agricultural purposes is defined, the question is directly entered upon, of the means for practical improvement. "How," the author asks, "may the required conditions of a quickened intelligence, of increased bodily aptitudes, and of imparting to two the efficiency of three, be best brought about for the agricultural population?" The answer is, that a large commencement may be earliest and best effected through the administrative machinery of the Local Government Board. That Board has in its charge, in the various institutions throughout the country, some thirty thousand orphan and destitute children. Their administration, as stated, has supplied the example creating an interest in naval and military specialities. It may well be required to face about and create an equivalent retaining interest in the speciality of the culture of the land. To this end educational works on agriculture would alone be required for the instruction of children, with some specialist teachers, and a few specialist inspectors.

The district institution buildings, already constructed, have very good capabilities. They have more or less of land attached to them which might be utilised. They have all steam-engines, and in some of them the boys who are put to practise stoking might have special and scientific instructions provided which would render them first-rate aids to the engine men on the farms. The institutions have large kitchens, and bakeries, and laundries, and some have dairies, all of which may be made good places of training for girls in farm

service. In most important respects they are capable, with little expense, of being made model elementary schools to the adjacent schools in the agricultural districts for primary instruction, and the greater part of them are paid for by the land, so their fruit may be said to be due to the land.

It may be anticipated that in local re-organisation there will be, in conformity with independent representations, the restoration of the principle of administration of Poor-law organisation, which the commission of inquiry of 1833 agreed with the author in proposing—viz., the classification and treatment of classes in separate houses for each class, or in separate houses with special economical treatment for children. On such a principle the whole of the thirty thousand children under the jurisdiction of the Local Government Board would have the benefit of further improved adaptation to required specialities.

The children of the ratepayers in the board schools, and in the other common schools, can rarely obtain so good an intellectual teaching as is obtainable in the district and larger half-time schools now maintained out of the rates; while of physical training in systematised gymnastics, there may be said to be none at all. But in some of the northern districts the administrators having bethought themselves that the ratepayers might be permitted to participate, through their children, in the advantages for which they have paid, their children have been admitted to the half-time schools as day scholars. This is of considerable advantage, as it serves to fill the classes and augment the power of grading; and it is an advantage that may be widely extended with

the progress of educational organisation. At present, large numbers of children find only schools available which, whatever may be the school organisation, are to be regarded solely as assemblies of unwashed children, with dirty clothes,—dangerous centres of children's epidemics.

In the district half-time schools, there would only be children who, dressed in clean linen, have undergone regular head-to-foot ablutions, assemblages in which children's diseases of spontaneous origin are abolished, and in which the death-rates, though further improvable, are not one-third of those of the children of the school ages of the outside population. The outside children would enter a school with such incessant, interesting occupation, as to leave no room for the moral contamination of idleness. In the common small school, the child can only get a short direct lesson from the master, and has a long time of painful waiting. In the other he has no vacant time, and is always occupied—it may be, agreeably. The advantages of the district half-time model schools could not fail to be soon appreciated by the agricultural classes.

In support of these recommendations the author had the evidence of one of the industrial schools, under the management of Captain Rowland Brooks, at Feltham, in respect to the special direction in such a school for the formative training of children for agriculture. Captain Brooks concurred in their practicability, and adduced a very complete proof for their accomplishment. It struck some one that some of the boys at Feltham might do for a farm in Wales. They were sent, and answered so well, that farmer after farmer applied for others, and

soon between two and three hundred were doing well, some of the elder ones having got to occupy farms themselves. The change in the direction of these schools, if the industrial were added to the Poor-law schools, would of itself add a powerful contingent of some forty thousand or more youths, trained bodily and mentally, for the advancement of the agriculture of the country; and that too with a reduction of the common expenses of teaching and training.

Passing from primary to secondary education, the author contends that the schools he has proposed would supply better materials for the service of those trained in the superior agricultural schools, the provision of institutions for which are statistically extremely inadequate. Mr. Chalmers Morton estimates that in England and Wales there must be, in ordinary times, as many as ten thousand changes of occupations of farms every year. In all these it may be assumed that the application of superior science would be attended by some advance of production. But to supply this demand, what is the provision of some hundred students at Cirencester, and of all the agricultural colleges of England and Ireland put together? How many of these appear to give leading expositors to influence practice at the agricultural clubs, or successful competitors with prize farms? On the Continent greater encouragement is given by the State for providing superior agricultural instruction. A recent report of the Royal Agricultural Society of Scotland gives a discouraging account of the little support given anywhere to the colleges for superior agricultural instruction in this country. This may arise in part from the scientific instruction

being too high to be very practical, at least in estimation of practical farmers. But the l effect of the superior instruction on the Conti as well as here is certainly in great part due to general want of preparation for it at the base,— the want of elementary instruction in the labou hands who are to apply it. For all the specia required in improved elementary instruction, l ever, time is required to be saved out of the com course of such elementary instruction.

Unfortunately, the primary principle of educa the capacity of the recipient, *the mind*, is understood or regarded. By tests—as conclusiv tests for any physical results—it has been made that the receptivity of the minds of the great ma children for direct instruction does not exceed t hours daily; but now attention is required for and six hours daily. Teachers are required to quarts into pints, or gallons into quarts. As a co quence it is a common observation that, after lea school, children have forgotten the greatest pa all they have learned. There has been a wast what has been laboriously put in. If more is t put into the pint, the question is, what is to be out of it? There is a strong declaration that s ing ought to be changed, or left out in the infa stages. Mr. Pagliardini, who was for many yea teacher at the St. Paul's School, and has exam the subject, declares that by spelling reform, ou the five millions which the public pay for pri education, two millions might be saved. Fai much importance is attached to spelling. Fred the Great was a scandalously bad speller; Bona never spelt well; His Majesty George III. would

have got through the fourth standard. One of Pope's lady correspondents writes to him that, though he may sometimes find too many letters in her words, she hopes he does not find too many words in her letters.

Mr. E. Jones, of Liverpool, a very experienced teacher, and a strenuous advocate for spelling reform, says that "last year the total cost of public elementary schools in England and Wales, from all sources, was over £5,000,000. This amount has increased, and is increasing. How large a part of this is wasted upon spelling! This is the Department's method of teaching thrift and economy to young England; this the method of teaching elementary science, by retaining the most unscientific instrument ever invented by human perversity. What is the net result of this £5,000,000 spent upon education yearly? Simply this, that 80 per cent. of the children of the country pass the limit of the school without reaching the third standard; and 50 per cent. without reaching the second standard." The late Lord Derby used frequently to drop the "h" in pronunciation, as did the Prime Minister Sir Robert Peel, and as do some of the foremost men of the country—in Lancashire and Yorkshire particularly. But a great part of the labour of the inspectors, and the time of the school, is getting it inserted in the children's speech. Much time is also expended in expelling provincialisms, the retention of which may be defended on social grounds. Mr. Tito Pagliardini tersely and justly observes:—"Now, after seven years of painstaking, laborious work, spent almost exclusively in spelling, but sufficient to instil the elements of most useful knowledge into children's

minds, and give them a thirst for more knowledge, what are the officially stated results? That out of 2,741,300 children on the books of the inspected schools, only 19,349 could read with a certain fluency and expression, giving less than one successful pupil for each of the 22,000 certified teachers. Was it, then, for so unsatisfactory a result that the people of Great Britain met enthusiastically all over the country, claiming education as a right for every child in the realm, and consenting to be taxed that national education should become a living fact?"

In France there is an agreement to ease elementary education by reforming the old spelling.

Mr. Bettenson, a representative teacher of the British Schools at Maidstone, remonstrates that the new proposals "do not include one to meet the worst evil of the present system,—namely, that school-life ought to be made as attractive as possible to the child; its whole career at school is one of perpetual worry, and no less is it to the teacher. . . . Of all the subjects in the world," he complains, "the one which must be taken, if any be taken, is that of English grammar, with its mass of dry, bewildering technicalities, every atom of which will be forgotten within three months after leaving school."

As to arithmetic, school teachers assert that if they were allowed to teach it on the decimal system, they would teach it in half the time now occupied, and impart a better habit of mind by it. And so in respect to the metric system, Sir William Thompson, in his address to the British Association at York, said in reference to it, "To it we are irresistibly drawn in all scientific and practical measurements,

notwithstanding the dense barrier of insular prejudice made detrimental to the islander." Why, then, should not the child be left to go on easily, and pleasantly, and quickly with these systems until he leaves, and has to take up duodecimals in the work of the farm?

There has been another general mistake in national education, in not considering the infant school as the primary stage, as the most formative stage, and as the stage that may be made to save nearly two years of school life. All these savings of time by improved methods, added to the two years' saving of time, which the school teachers declare they can make, if left to their own desires, with their existing methods, except as to classification, make out a saving of nearly half the present school time in imparting an equivalent amount of quickened and really better instruction, and in graded schools, with a greatly reduced cost of teaching power. In fact, three children at least might be taught well at the cost now expended in teaching two badly. This saved time might be applied in the day schools to the earlier liberation of the children for productive industry in the field or the farm; or for imparting a superior secondary instruction up to the needs or desires of families for their sons to the thirteenth year.

Several manufacturers, who have had experience of the working of the half-time system, in preventing over bodily work in the mills, and in manufacture, as well as over bodily work in the schools, have manifested an anxiety for the introduction of that system into agriculture. Of these the late Mr. C. Paget, the member for Nottingham, was one. He introduced *the system* on a farm on his own estate,

and gave a very favourable account of its working, as others have done, to the Agricultural Educational Commission of 1861. If those experiences be examined, the results will be found to be decisive. There was only one point of difference; namely, as to the comparative eligibility of the distribution of the half-time service on alternate days or a half day. But the experiences of the latter and more correct plan appeared to preponderate, as in manufactures, both in respect to the quality of the labour and the quality of the instruction.

To the evidence afforded above our essayist adds the opinion of those who are best able to form a judgment as to the immediate results of the present system of school teaching of the agricultural communities. He objects, through the teachers, to the administration of the Code by the present system of annual examinations, and deals some weighty blows at the administrations, as will be seen in the following selections from his argument. Towards Mr. Mundella, who, at the time when the essay was written, was an all-potent official supporter of the annual payment system, he was fire with fire.

The school teachers declare emphatically that, apart from all questions as to the modes of payment, they would not, if they were left to themselves, work on the methods of classification enforced by the Privy Council.

They allege that, if they were left free to use their own methods, they would often save two years of school time to the pupils.

Now, why should they not be left free? The official answer appears to be that the annual examination is deemed to be requisite for the attainment of

results as a security. But effectual results are not attained. The work done in private schools has been better done than in the inspected schools. The teachers' statement appears to be confirmed by the practice in Germany, where, under the system of the final or leaving examination, annual preparations for examinations being forbidden, the children attain to the same level from two to three years earlier than under the practice in England.

The Privy Council security, by annual payments on annual examinations, is, in fact, in stages towards the attainment of the final result. But what have the public properly to do except with the final result? The leaving examination should partake of the character of the entering examinations for the scientific corps, in which no heed is taken of the previous methods of instruction, however obtained by the competitors. To illustrate the case, what would Mr. Mundella say to the public department which issued to him a contract for his manufactured stockings, if, instead of confining the examination to the final result in the manufactured article, a Government inspector should inspect at each stage:—First, how the wool was carded; next, how it was spun; then, how it was dyed; and, again, how it was woven; and should, moreover, require that the inspector—who was not a manufacturer—should see to the order and discipline of the manufactory where the work is done? What he would say to such an administration may be said to that which he sustains, at the expense to the public of the two years' payment, of thirty shillings per head on the four millions of children taught, and to them and the parents of eight millions of years of productive industry; to an

administration which goes on with a production two years behind time; and, to an outcome of undeniably bad articles, in the shape of upwards of one hundred thousand criminals who have passed through the schools.

The school teachers, who take measure of the inspectors, declare that these inspectors themselves were, when appointed, unacquainted with the art of teaching and that their primary education had generally been of the worst, as evinced by the necessity of cramming, to repair the bad primary education in all the schools through which the inspectors have passed. The teachers admit that most of the inspectors in time have obtained competency, though it has been at the expense of the teaching, but that some of them have not even yet attained it.

Nevertheless, the leaving examination proposed may be conducted with entire security by any of the inspectors, as it is confined to the results, and requires no technical skill as to the various methods of teaching by which those results have been obtained. The services of the inspectors would then be reduced to the annual or other periodical examinations of those who claim to have attained the fourth or other standards; and to the adjustment of the claims of teachers to compensation, where the pupils have changed their schools. The alteration of the method of payment might involve some financial trouble, but it should not on that account be retained at some millions of expense to the ratepayers.

The *Schoolmaster*, which is the organ of the school teachers of the United Kingdom, expresses intense surprise that the new Code is entirely silent on the subject of physical training; and that there has been

no recognition of the greatly increasing demands for it.

The fact is, that the subject is to be regarded as entirely out of the knowledge and present competency of the Department, to deal with it effectually, it being a topic of special sanitation. The officers whose services are first required are the local Medical Officers of Health, who should periodically inspect the schools, take order as to the health and physical condition, detect the premonitory symptoms of infectious diseases, follow the children to their homes, and give instruction as to their treatment at their homes. In respect to all the district schools which are under the direct control of the Local Government Board and the union houses, such order is taken with the effect of the almost entire abolition of the children's epidemics of spontaneous origin in the union houses, and with advanced physical training in the case of the half-timers.

By recent examinations, it is made out that the death-rate prevalent amongst the elementary school teachers, is twenty per thousand; that is to say, a rate in selected lives four times greater than the rates now prevalent amongst the police or the Royal Navy, apart from the accidents and casualties due to those services. The elementary school teachers' death-rate, originating chiefly from the foul air of disease arising from the breaths, skins, and clothing of children, crowded together in small, ill-ventilated rural schools, or in class-rooms, involves the loss of over one hundred and fifty teachers annually. Moreover, each preventible death denotes an average of twenty cases of preventible sickness, and with each case of sickness an average of two-and-a-half weeks' loss

of service during sickness and convalescence. The estimated total money loss from these excesses of sickness and death is upwards of £90,000 per annum. The effect of the half-time principle, as denoted by large increase of attendances of children from reduction of sickness, would lead to a proportionate reduction of these losses.

By following the examples of the application of the principles here set forth, beginning first with an extended application of the principles in the district schools and in other schools that are under the charge of the Local Government Board, it is demonstrated that three at the least may be trained and taught well at the common cost of educating two badly. By these improvements more agricultural children may be got through the fourth standard by their tenth year than by their twelfth or thirteenth year under the present plan, and may then be set free for productive industry.

Objections are raised to giving more than what is termed the primary instruction in rate-aided schools. But these objections are hardly tenable in giving within the period, which is now accepted as the primary period, the instruction to the farmer's children, for which, as a ratepayer, he largely pays, and which he cannot get elsewhere. The farmer's son might, by his thirteenth year, be liberated for the work of the farm, with good freehand drawing, with mensuration, with agricultural account keeping, with botany, and with some of the science for which Sir John Lubbock pleads. The farmer's daughter might participate in the advantages of advanced physical training, and exercises in domestic economy,—true accomplishments largely needed.

A stronger interest in the agricultural pursuits, such as the French agriculturists desiderate, may be ensured to countervail the interests and enticements of the town. In such new interest must be included a general advance in the usual wages, and if we give to two—as it is the effect mainly of the bodily training to do—the efficiency of three, we shall thereby save the food, the clothing, the lodging, and the board of the third person.

The essay on the education of the agricultural classes closes with a summary of the ultimate advantages which ought to accrue to the labouring populations.

The extension of the use of labour-saving machinery in agricultural districts must be carried out, as it is in the manufacturing districts, by more intelligent, more skilled, and more trustworthy hands,—by men of more trustworthiness, and of a higher social and moral position, to whom higher wages, consistent with that position, must be given, and which may well be afforded out of the large savings which their services will effect. The half-time schools are now attended by marked proportions of advances to middle-class positions in life. On the whole, their experiences will, when examined, justify the conclusion that by reducing what is proved to be reducible, ineffective, or injurious in mental training; by imparting what is required in physical training; by directing instruction to the specialities of agriculture, and to the arts and sciences available for it; the interests of agriculture and its production will be greatly augmented through a more intelligent, better educated, and better working population, and through

a counter-interest created and countervailing the present attractions of life in large towns.

The question, primarily, is one in the interests of employers, but it may be also dealt with in the interests of the wage-classes engaged in agriculture, for their advance in intelligence and usefulness, and for their consequent advancement in wages, social position, and general prosperity.

CHAPTER IX.

THE SCHOOL CHILDREN OF LONDON.

IN the metropolis of the world, the author of the original library which is under our observation in these volumes has passed the greater portion of his life. In this metropolis, in all its parts, he is at home. He has a liking for seeing London and its inhabitants under every condition of life, and much of what he has written takes its colouring from the impressions he has formed while thus occupied. This fact is singularly borne out in respect to his observations on the children of the metropolis, and on the best methods that can be adopted for their physical and mental advantage. In my perusal of the numberless essays which I have had before me, the training of the children of the metropolis has cropped up so often that it seems to me to have been constantly in the mind of the writer when he has been treating on the social development of the people. But the best essay, as well as the latest on this topic, is one which he wrote in the year 1882 under the title "The School Children of the Metropolis." This essay may be said to embody in brief summary the mind of its contributor, derived from more than half a *century of observation* and research. After com-

menting on the character and value of some physical exercises for children which he and I had witnessed together, he speaks in commendation of the Swedish system of training.

In the advanced practice in Sweden with urban children, every child on its admission into the school is diagnosed by the medical officer, who gives a prescription of the specific exercises to be applied. There are large reasons why this example should be followed in this country. In the army, recruits are diagnosed for the preservation of military force, and in infancy the same should be done for the preservation of civil force, by preventive and curative physical training. In the lower urban districts, too, large proportions of children are presented whom a Spartan policy would relieve of a painful existence to themselves and the community; but who, as we can now show, in the district half-time institutions for orphan and destitute children, generally of the lowest type, may be well preserved by sanitation, bodily exercise systematised by industrial training. Under these benign influences the children's diseases of spontaneous origin are almost banished, and the sickness and death-rates from them are not now one-third of those generally prevalent amongst the children of board schools, whilst, excepting idiots, full ninety per cent. of the children, by their improved aptitude—through which the efficiency of three is given to every two—for industrial occupations, are got into productive service.

In the primary schools of Holland, some of which the author visited with the chief inspector of primary schools, all the children were particularly clean. If in the girls' school the head mistress observed any

child to whom the duty of head-to-foot washing appeared not to have been performed, she directed a *bonne* in attendance to take out the child to a proper apartment, and examine it, and give it the requisite cleansing with tepid water. If the work had to be repeated with the child, it brought discredit on the mother for neglect, and was rectified.

London board schools are deficient in the appliances for the performance of a service which would be a much larger factor in sanitation than is supposed by school managers, and one especially beneficial for the children of parents too many of whom have not, in the present condition of water distribution, really the means of providing for personal cleanliness at home. The schools are deficient in tepid swimming baths, such as most district schools are provided with. We do not compare in this respect with some foreign schools. The Rev. Joseph Maskell, Master and Chaplain of the Emmanuel Hospital, Westminster, in an account which he gives in the *Journal of Education* of a visit of examination he made to the primary schools of Belgium, observes: "I was struck with the neatness of dress and the cleanly appearance of the female children. I saw many signs of poverty in pinched faces, in patched and mended garments, and in coarse texture of dress, but the children were invariably neat and tidy. Every school," he says, "has now its gymnasium, with a special teacher and special times of practice, as part of the regular curriculum. So much importance is attached to gymnastics in Belgium that there is a monthly publication devoted to the interests and operations of this class of teachers, the *Gymnastique Scholiaire*." There is also regular medical inspection of

the schools. The same should be carried out here.

By the first general Board of Health it was provided, as one of the duties of the medical officer of health, that there should be a regular inspection of the school children; and, on the detection of a case of incipient infectious or contagious disease, he was directed to see to the removal of the sick child, to follow it home, to watch its treatment there, and to attend to the sanitary condition of the home and its amendment. But this service still remains to be applied systematically. Had it been carried out, it would have stopped the greater number of those epidemics which occasion the closing of schools, for which teachers are asking for compensation for the losses of their fees consequent on the closures; it would have reduced the heavy death-rates prevalent amongst teachers, death-rates four times greater than amongst seamen in the Royal Navy. The sanitary service required for the schools would have gone against a total loss, as estimated by medical officers, of more than fifty thousand lives in the school stages of life in Great Britain. As respects the physical exercises in the board schools, Miss Lofving has represented that the long-time system of education occasioned so much obstruction that she could not continue her services efficiently or to her satisfaction, and she has consequently retired, leaving any continuance there may be in the partial school exercises of girls to an inferior service. At the same time, mothers complain before magistrates of the injury it does to them by depriving them altogether of the earnings of their children for the support of their families.

The subject is then further illustrated by the suggestion that the civil schools might act for physical training as good schools for the military service. The War Department, on the invitation of the King of Sweden, sent a commission to examine the system of physical training in use there. The reporter, Captain H. Armit, of the Central London Rangers, reported highly and favourably of it, for the gain of civil as well as military forces. The gymnastic college there, he stated, had branches in all the principal towns of the country. "By this means the civil and the military schools are connected. A link or bond of union exists in the instructors, who are also sent from the military establishments gratis to all State schools throughout the country. The result is that the whole Swedish population has by degrees been trained and disciplined by means of the Ling system of extension drill, and has thus been accustomed to work, when assembled in large or in small numbers, with an exactitude and a precision of motion hardly credible." He spoke of "the many and great benefits which it conferred upon a people, by strengthening the system of the weak and of the robust alike, by infusing health and vigour into the mind, and by teaching to all the value of and the necessity for the existence of discipline amongst all classes of the community. In truth, the Ling system has made of Sweden a disciplined nation. The introduction of the system would," Captain Armit says, "cost the taxpayer nothing beyond the salaries paid to the instructors, as no appliances of any sort are required. On the other hand, recruits for the army would present themselves, not as untrained men, but as men proficient in every essential point

necessary to form a soldier except the rifle exercise, which latter would not take long to teach them. They begin by the eighth year." It may be added that with a far less favourable climate, the general death-rate in Sweden is about three per thousand less than the death-rate in England.

In contrast with this system of physical training in Sweden, our author dwells on what he considers to be the defects of the London School Board. On a review of the London School Board it appears that the prevalent majority of the members have not attained to the knowledge of the economy of health and force, nor of employing the most effective means of attaining it. They would not give more than half the salary to the professor of physical training that they gave to the head teachers of a very defective system of mental training. The school drill review, for which the Society of Arts gave a prize, nearly fell before an opposition of a member of the wage classes, on the ground that it tended to foster a military spirit, in ignorance of the greater fact that it promotes an industrial spirit, and actually raises wages. The schools have been conducted on the common policy of rearing two colts to obtain one working horse, which, when raised, has only a limited existence of two-thirds of a healthy period of working ability. Instead of obstructions being removed, and physical training made complete and prevalent in all schools, it has been left to go on in secondary, inferior, and comparatively ineffective conditions.

Leaving the difficulty of physical training, affecting most deeply the children of the wage classes, allusion is next made to the experiences bearing upon the

ordinary conditions for mental training in the board schools.

Those who have given earnest study to primary education are aware that the highest training power should be the most sedulously applied, specially with the lowest classes, in the most formative period of life—the infant school stage. In the United States great progress is making with the infant schools and the Kindergarten, both highly popular with educationists there, who reckon from them a saving of two years of school life. It is to be borne in mind as a primary object that all saving of time that can be effected in the earliest school stages is gain of time for the ultimate or secondary stages, beyond which, owing to the time now occupied with primary education, the wage classes cannot afford to keep their children. It is generally agreed that in order to secure the greatest formative power of teaching, the service of ladies should, if possible, be engaged, on account of the greater degree of influence they are capable of impressing on the manners of the children. It is stated by a member of the Board, who has paid special attention to primary schools, that even now not more than one-half of them have yet attained what is deemed a fitting and effective condition in their appointments. Miss Lofving expresses her regret at finding that, where the highest teaching power should be applied, she generally found that the supposed least expensive, not to say the most indifferent, was given.

As respects the next school stage it is usual to put forth the advances made in the passes of the School Board children; but it is omitted to state at *what expense of time* and of money those passes

have been obtained. The orphan and destitute children who have been at the board schools, but who are afterwards sent to the district half-time schools, are found, as a rule, to be in mental attainments far behind the children of the same ages and school attendance who have been exclusively at the half-time schools. In the board schools very few obtain the fourth standard by their tenth year, the great majority only by the eleventh, twelfth, or thirteenth year. In the district half-time schools the mass of the children have got through that standard by their tenth year, and in one of the largest by their ninth year, and this with the lowest type of children. Mr. Marsland, of the Anerley School, declares that if he had children of the type of the Lancashire or the Yorkshire children, he would undertake to get them through the standards in half the usual time, by a judicious combination of mental and physical occupation. But a larger foreign national experience may be cited—namely, that of Prussia, where children are taken into school only by their sixth year, and are passed with more than the British equivalent of the fourth standard by their ninth year. Miss Clough, the principal of the Newnham College, Cambridge, was at pains to get over the demonstration of a method, now spreading through Germany, of teaching reading and writing in less than half the time now occupied in the board schools, but she failed in getting due attention to the subject. Experienced teachers have declared that if they were left free to use the decimal system, they would teach arithmetic in half the time now occupied with it, and impart a better habit of mind and preparation for higher studies, without detriment to the power of the

pupils in taking up the duodecimal when they entered upon their technical occupations. Eminent teachers are agreed as to the uselessness of teaching grammar in the earlier school stages. Some School Board teachers have, moreover, indicated that if they were left free to use their own course with children of different capacities, the quick and the slow, they would, with the ordinary British methods, and within their own period, after the infant school period, save full two years of the common school life. They verified this by what they had done when their course of teaching was free.

The essay is brought to a conclusion by adverting once again to the economical results which would follow upon the plan the author has been advocating so earnestly. "Consider," he says, "the waste of two years of school life to each of half a million of children—of one million of years of school life miserably misapplied. Consider the waste of earnings! Consider also the gain of years of school time by efficient administration in the infant school and Kindergarten period. The expenses of teaching power in the board schools should not be more than double that of the large district schools,—the expenses of which are under one pound per head,—paid for inferior teaching power, at higher salaries, than the stated average of the board school salaries, and with the expense of drill masters and masters of manual exercises included. It is true that it is not the Board, but the Code, which is responsible for this miserable waste of time, the children's earnings, and the rates. But the Board is held to be responsible *for making no exertions* to rouse the attention of

Parliament to a double expenditure of the rates with inferior results."

In this required reform Paris is taking the lead of London. The half-time principle has been recently adopted by the Municipality of Paris for its primary schools, and has also been adopted in the new educational code for all children engaged in agriculture and in manufactures, which class includes the great mass of the children of France. Its systematized extension in England was recommended by the Commissioners on the Factories and Workshops Regulation Acts.

On a review of the work of mental training in the board schools, it is observable that it displays a lack of knowledge respecting the very basis of a sound system—namely, of the limits of the mental receptivity of children. It ignores the facts that the receptivity of children of the average ages is generally exhausted, by direct simultaneous class teaching—the only effective teaching—in less than three hours, and that all sedentary constraint beyond three hours is followed by most miserable and detrimental waste of time and money. Where the limits of the mental receptivity are unknown, undistinguished, and disregarded, the very foundation of the efficient and economical administration of educational funds is unknown, and the consequences are displayed in wearisome efforts, as it were, to get quarts into mental capacities of pints, and of gallons into quarts, with prolonged sedentary detentions for this foolish purpose, and with grievous bodily as well as mental injury.

One fundamental rule that would in itself effect an entire change in teaching, with adaptation to the

mental receptivities of children, would be that no lesson should be allowed to be given that had not been found, in different classes and conditions of children, to sustain the attention of all to the end by its own interest. Then a policy of sedulously accommodating learning to earning, in the case of the poorest of the wage classes, would take the place of the common policy, now carried on, to a most grievous and pernicious extent, of sacrificing earning to learning.

CHAPTER X.

PHYSICAL TRAINING FOR TRADES UNIONISTS.

AN opportunity offered for the advocacy of physical training of children in the manufacturing districts *apropos* to some of the labours of the Congress of Trades Unionists in 1885. The *Times* was, in the first instance, the chosen organ for the expression of our author's views, but he afterwards tendered them to the unionists themselves in a communication eminently characteristic. In this essay the object enforced is civil drill on the military basis, to so improve the training of children as to enable them to meet the unceasing demands for more fitting labour in arts, manufactures, and commerce. The argument is stated in the following terms :—

"Let a trade unionist consider what the military drill itself will do for his son. In the first place, it improves his walk, and enables him to move from point to point quicker, with the same amount of force. Let the difference of the set-up and movement of drilled and undrilled boys be observed. The drill makes the boy tread more evenly, and saves shoe leather. School teachers, who have been trained in the military drill, state that they find they now save a pair of boots a year by not treading unevenly as

they used to do. The even tread saves trousers by throwing up less mud upon them. These life-long economies will be comprehended by mothers through the tailor and the shoemaker. Trades unionists may slight them as not being in accordance with their policy of doing "what is good for trade." But the drill conduces to qualities of a high moral order and value denoted by the term discipline, patience, order, self-restraint, prompt and exact obedience. Children so trained learn to move quickly together, and to pull together, and exert force with fewer hands. If anyone will go into the large Lambeth Poor-law School, which is a well-drilled school, he will see in the quickness of changing classes, with order, the qualities displayed in the large manufactory which make the children worth more, because they earn higher wages. Employers have declared that the volunteers so drilled are worth several shillings a week more than the undrilled. On pressure, and mainly for the qualifications for civil work, the Privy Council was got to make an allowance for a drill-master in schools. There are now more than a thousand of the National, as well as the board schools, in which the military drill is introduced, and all the education inspectors bear testimony to the improvement produced by it on the education of the schools. There is, however, drill and drill. Drill-sergeants were generally taken for the schools because there was no one else to be got, but Professor McLaren, of Oxford, has made large accepted improvements on the ordinary drill, which have yet to be introduced into all schools. In the large district Poor-law schools, in the industrial schools, and in reformatories, now comprising upwards of

forty thousand children, all of which schools are based on the half-time principle, it is necessary to call in the aid of workmasters, such as carpenters, smiths, shoemakers, tailors; sailors, for exercises on the ship's mast; farm bailiffs, for exercises in tillage on the school farm; stokers, for work at the steam-engine; teachers, for teaching, and for the girls' work at the laundry or in cooking. Aptitude to the hands for whatsoever industrial work may turn up is thus imparted. On a recent visit to the large Manchester Poor-Law Half-time School at Swinton, the master confirmed the conclusion from practical experience, that the general result of the half-time principle, so worked out, will be to impart to two the efficiency of three ordinary labourers, for productive industry, and with proportionate augmentation of their money value as labourers. It is necessary to give such amounts of practical instruction in these institutions in order to clear the subjects from hereditary, vagrant, or pauper taint, which exist in upwards of ninety per cent. of children of the lowest type in the towns. But it is a training beyond what can be got by farmers or middle-class persons outside of the institutions. It is to be noted, that the cost of the mental training power and of the physical training power together, at higher salaries, is not above one-half the average cost of the teaching and inferior training given in the long-time schools. It is about £1 per head per annum. Of this about one-third may be set down as the cost of the physical training, or, including swimming lessons, about a penny-halfpenny per week. Every member of the wage *classes* may be directed to the conclusion, from *existing* experiences, that, by the payment of about

a penny-halfpenny per week for four or five years, an increased value may be imparted to his son of one-third greater efficiency, and of proportionately augmented wages for the whole of a prolonged life. Thus an offer to the district school at Anerley for the artillery had no effect, for no boy would volunteer for the army. Immediately the boys leave school they get such wages as 12s. a week, and as they grow older and stronger they have an early prospect of 24s. a week and more as wages. At Manchester some of the lads become foremen very early in life.

"In mental improvement these half-time schools of mixed physical and mental training are also generally in advance of the long-time schools, which are almost solely for mental training. Children who have been in the half-time schools from infancy get through the fourth standard, on the average, by the age of about nine years and a half—children, be it borne in mind, of the lowest type—and at half the annual cost of training as well as of teaching power of the long-time schools, where the children do not, on the average, get through the fourth standard in less than ten years and a half, or eleven years. This may be ascribed to the fact of these district schools having the children always in hand. But the like results are obtained at large graded open schools for day scholars, such as the one at Faversham. Of the pauper children in the parish schools of the metropolis, formerly examined under the Poor-Law Commission of Enquiry, only a small minority reached inferior places; the rest were found on the streets as beggars or vagrants, or in the prisons as delinquents. Excepting idiots, or the bodily disabled, ninety per cent. of those trained in the district half-time schools

are accounted for as going to the good. The sanitation in these institutions is also pre-eminent. Lord Cranbrook, speaking in favour of the boarding-out practice, stated that the death-rates were only eight in a thousand. Our information gives more than that. Amongst children brought into the half-time schools without any developed disease upon them, the general death-rates are under three per thousand from the results due to diseases of spontaneous origin within these institutions, or about one-fourth of the death-rates of children of the same ages of the outside general population.

"It is to be observed, as a great recommendation of those preventive physical exercises that contribute so largely to the happiness of infantile and juvenile life, that to prohibit the enjoyment of them becomes a punishment. At the Manchester School Board those who are remiss in their attendance at the mental work are not allowed to join the physical exercises. At one district school, where there was the mast drill, the master only allowed the good boys to go upon the mainyard arm, and his very best or favourite boy to be mastheaded.

"With the progress of physical training, the number of desertions from the district institutions has progressively diminished.

"We find, however, on examination, largely increasing serious demands for special sanitary organisation, for the prevention of the deterioration of the physical condition of the general population. Lieutenant-Colonel Moody, of the recruiting service, states in his last report that four hundred and twenty-eight out of every thousand of recruits applying for enlistment were rejected on grounds of bodily unfit-

ness for Her Majesty's service. Let the trades unionists consider that this extent of unfitness for military service represents an amount of defect amongst children and persons of their own class which renders them inferior for the endurance of productive labour, and for earning of wages in the civil service.

"There are, again, other largely increasing demands for the sanitary service of prevention in the juvenile stages of life. In the last census for the United Kingdom, there is an enumeration of thirty thousand blind. But Mr. Brudenell Carter and other specialists hold that, by competent attention in the infantile or elementary school stages, a large amount of this suffering—some assert two-thirds—may be prevented. The census shows there are in the United Kingdom one hundred and twelve thousand lunatics. Physicians, the heads of the asylums, declare that, as a class, the insane are of very low physique, and that by early physical training a large proportion of their calamity may be averted. The late Dr. Guy, who was for a long time the chief physician of the Prisons Department, suggested that it ought not to be overlooked that, as a class, the population of the prisoner class, amounting to twenty-eight thousand within prison, and forty-seven thousand at large—who chiefly keep up that population—is of low physical and low mental condition; and that a great deal of punishment is in fact inflicted, on conditions almost of insanity, which early and good physical training would largely reduce. The attention of the Swedish Government has been given to special measures of sanitation for the reduction of the masses of evil arising from defective physical train-

ing. At Stockholm every child on its admission to school is diagnosed by a first-class specialist in sanitation, who writes a prescription for the remedy of any special defect he may find as beyond the ordinary preventive exercises. If a child is very flat-chested, he prescribes an extra dose of those exercises which open the chest, and he gives the prescription to an appointed specialist, who is charged to see constantly to its due application. The lead of Sweden in this branch of preventive science is being followed in other States on the Continent, and in Belgium especially.

"Such facts as have now been supplied suggest a number of propositions. But the first step is to recommend to the Government the appointment of a college for the physical training of boys and one for girls, commensurate with the colleges for mental training, but distinct from them, and under the preventive health service. Some of the funds from the lapsed charity bequests for the benefit of poor children might fairly be applied to this purpose.

"The trades unionists should be invited to send deputations to visit the schools where the drill and other exercises are given, and to take their wives with them to see the treatment of the girls and infants there. Their support may, surely, be anticipated to measures for the extended application of what they will witness,—the better promotion of the health, strength, and working ability, for the advance of the earnings of their children.

"The resolution of the trades unionists for an increase of the sanitary inspectors may be regarded as displaying an opening perception of the importance of sanitary organisation, in which they are the

nost deeply interested. But most important con-
ribution to the principle adopted at the School
Teachers' Congress, of the priority of the concrete
)ver the abstract, comes from the United States,
vhere it is applied in the most formative period of
ife—the early infantile stage. At the kitchen garden
;chool, a table is provided with toy cups, spoons,
;aucers, and apparatus, which the children are taught
o take on and off. They have also toy brooms with
vhich they sweep the room. Every motion is to
he music of the piano and the song, to their great
nterest and delight; they are taught to receive and
o deliver messages. For the boys, there is a farm
;arden, and a table with a stratum of soil, over which
here runs a toy plough, then a toy drill to deposit
eed, and a toy reaper to remove the crop. The
hief agricultural operations are also to music and
o song. These concrete and visible operations are
ompletely understood by the children, and interest
hem; whilst abstract dogmas are not mastered nor
etained, and do not influence their action. Mothers
f the single-roomed or mud-hovelled cottages, come
nd complain that their little tots of children tell
hem how things ought to be done, and set them
o rights, much to the interest and the amusement
f the father. It is ever to be regarded as an import-
nt object to contribute the cheerfulising influence
nd the joy of childhood to the cottage, in place of
he depressing effect of any homework, in repulsive
nd generally profitless abstractedness.

"The half-time principle has been well introduced
n the elementary schools of Paris. It has been
laimed as the idea of the First Republic obtained
rom Rousseau. The acceptance there of the princi-

ple under that belief would be excellent. We, however, knew nothing of it when the principle was introduced in England under the Factories Act, as a means of protecting children against overwork, and of securing to them the benefits of education of which they were previously deprived. As a fact, moreover, the First Republic did nothing with the principle, nor was anything done with it until quite recently in France; indeed, the educational authorities appear to have failed to perceive that it will be inapplicable to the small communal schools of France or of any other country under such local organisation, and that it can only be carried out with efficiency and economy by the organisation of large graded schools, and by the simplification and the reduction of the time now occupied in mental instruction.

"On the operation of the school drill or military organisation, an economist may submit that by the transference of as much as possible of the military drill, from the productive adult or juvenile stages, to the unproductive, earlier or infantile stages, important public economies may be achieved. The military trainers all declare, that they obtain in the very infantile stages (for they can begin with extension motions at five or six years of age) a better drill than they ever do or can get afterwards. The tendency would be, in principle, the augmentation of that great volunteer force of a quarter of a million of men, of whom the trades unionists may observe the great majority are of the wage classes. The superiority of the quality of this force over our own barracked force, or over any conscripted and unwilling, and, therefore, inferior force, will be found to be incontestable. Our volunteers now beat the

gulars in competitions as artilleryists, for Lanca-
ire volunteers certainly would not require forty
ots to bring down one Zulu, or fail at long ranges,
require to be brought so close that it is impossible
miss the aim, as has been displayed by the regulars.
any case, whilst other nations are advancing with
ercise of the military drill in their elementary
hools, would it be right for us to stop such exercise
ours? The trades unionists may be assured, that
th our great free volunteer movement, and with
ce of such high quality, they need be in no fear
any forced conscription."

CHAPTER XI.

THE ECONOMICS OF EDUCATION.

AMONGST the various arguments advanced by our author in favour of education for the whole nation, one of the most powerful is that which rests on the economical aspects of education, and of the different ends of the culture of man. This topic so repeatedly turns up in his writings, there is some difficulty in selecting out the passages in which it is dwelt upon with most force and most originality. On the whole, I think I find it placed in the strongest form and clearest light in an address delivered before the National Association for the Promotion of Social Science on the opening of the session 1869-70. We were at that moment looking forward for the work of the school boards throughout the kingdom, and for "the establishment of a system which should secure the education of every child in England and Wales." This was the motto of the National Education League of Birmingham; and our author, expressing the hope that Scotland would be equally aided, seized the occasion to comment on the results of "a complete system of education which shall embrace the primary instruction of all children, without exception, in reading, writing, and arithmetic." The Education Union of Manchester added

to this desire, "that the education of the children of the working classes should combine industrial training with attendance at school, as under the provision of the half-time system, that is, half time attendance at school, and half time attendance at work."

Both theories were in happy position in regard to the thoughts of the writer of the address which is now before us, and on both there is stated, under the different heads subjoined, those parts which deserve to be most carefully culled and epitomised.

Man as a Subject of Culture.

"The late extensions of constitutional government on the Continent appear to have brought men of influential position more closely in contact with ignorance, and impressed them more seriously than heretofore with the need of extended and complete systems of education as means of social and political safety and progress. The report of Monsieur Duroy, the late Minister of Public Instruction in France, on a general system of free national education is the most able State paper to be seen on the question. Austria, it is stated, has adopted a most liberal measure of national education. The existing systems of popular instruction on the Continent are being examined, and their chief radical defects are in course of correction. In North Germany, application is being made of the half-school time principle, of three hours' daily instruction in school, as a security against over bodily work in the field, and against over mental work and sedentary constraint in the school. It is provided there that no child

shall begin work until he is twelve years of age, and has been six years at school; that no child from twelve to fourteen shall work more than six hours daily, and that he shall attend school three hours daily. In France, a decree has been passed for the introduction of military drill and gymnastic exercises in all the Lycées, which comprehend 40,000 pupils. In Holland, this has already been done for all the secondary schools, and from experience of its advantages the opinion of the school inspectors and public opinion is moving for its extension to all primary schools.

"At this time, I submit, we may look back and consider the aspects in which people of the lower class have hitherto been chiefly regarded for culture, and contemplate the past opinion of the dominant powers and their results to aid the judgment, at the present educational crisis of the starting-points to be taken up for the future.

"By the theologian—though not of the school of Luther, or Knox, or Whately, but by the hierarchy claiming infallibility—man has been chiefly regarded as an immortal soul, whose culture was to be exclusively diverted to the world hereafter, but with a prostration of the understanding and of the will to what is proclaimed to be honour and glory to God—by the yield of tithes and offerings here. An Education Commissioner of Italy informed me that in an extensive district, which swarmed with monks and banditti, there were not above 5 per cent. of the population who could read and write; but they had been taught their credos, and that was considered to suffice. By its fruits shall this hierocratic culture be known. The seats of its longest and strongest

influence—Rome, Naples, Madrid—are now those of the most ignorant, the most licentious, the most beggarly, the most untruthful and degraded, the most savagely and unchristianly revengeful and bloodthirsty populations of Christendom. If there be now in our own cities a quarter occupied by a population sunk in filth and in squalid misery, ignorant, passionate, and dangerous,—to be treated successfully only as children for the purpose of beneficence, but for peace and security, to be distrusted and guarded against as enemies,—it is precisely the population reared under that dominant hierarchical culture. Other opposite, exemplary, and truly Christian results may be adduced as having been produced by the earnest religious culture promoted by other religious denominations, but it would be wrong to overlook the outcome of *that* denomination which irreconcilably opposes itself to the proved means of educational improvement proposed by the Minister of Public Instruction in France, to the advance of successful neutral educational improvement in Holland, and to the continuance of the successful improvement made in Ireland.

"By the monarch, man was chiefly regarded as a 'subject,' 'untaught, uncomforted, ill fed; to pine daily in thick obscuration, in squalid destitution, and obstruction. This,' says Carlyle, 'is the lot of the millions, *peuple talliable et convenable à merci et miséricorde.* In Brittany they once rose in revolt at the introduction of pendulum clocks, thinking it had something to do with the gabelle.' As to teaching, it sufficed that, being clothed in coloured cloth of a few sous the ell, the subject should be taught to

turn to the right and the left, that he might fight for the honour and glory of the State, '*Et l'état c'est moi!*' said the *Grand Monarque*. The outcome of this culture is displayed by the economist Vauban, and is pictured by La Bruyère, as it subsisted immediately before the French Revolution; and I need not point out the extent to which such conditions, with as little regard for them, subsist at the present hour.

"By the politician in our times—by the politician who rejected the power of understanding, by reading as a test for the exercise of the franchise—man has been chiefly regarded as a voter, who may be excited in any way, led by the ears, or moved by beer, to vote for the support of the party, amidst the madness of the many for the profit of the few. By the politician of both colours it was declared that the unschooled and unreading would make good votes—and that sufficed. The outcome of this politician's work is seen in the spread of corruption wider and deeper at each change, and in such vile political and social demoralisation as has been unveiled to scandal in Europe, in various inquiries in such places as Bridgwater, by my former colleague, Mr. Chisholm Anstey, and by his able and most praiseworthy fellow-commissioners.

"But we here may now solicit the counsel of other and scientific authorities, by whom man is regarded without sinister views, purely and mainly for himself.

"By the psychologist man is regarded for study and culture as a thinking, reflecting, and reasoning animal, and by him, the psychologist, it is declared that the mental powers of attention, reception, and labour of cogitation are limited by definite laws,

which are not violated without much injury, and are often grossly violated in all our old common elementary schools. Our most distinguished psychologist, the author of the greatest modern work on the Senses and the Intellect, Professor Bain, of Aberdeen, declares that there are there the hardest heads and the hardest workers in Britain, and that four hours of steady mental labour is as much as is good for them. If four hours be as much as is good for the hardest heads of young men, the laws of mind are violated by the common scholastic requirements of five and six hours' daily mental work for the soft and tender heads of infants and growing children!

"By the physiologist man is chiefly regarded as an organism, subject to important laws for his rearing and conservation. By Professor Owen it is declared that the length of sedentary constraint of young children to five or six hours of daily desk work,—that culture of the mind without culture of the body,—is in violation of the laws of physiology, and that all excessive bodily work in the infantile stages is, during the later stages in the adults, injurious to the organism, by impairing its power and durability.

"But for successful puericulture the aid of another science, the science of the economist, which is concerned in the production of the material means —the food and clothing of the orphan, the expenses of training and teaching, and the return for the outlay—must be put in requisition to aid the science of the psychologist and the physiologist.

"By the political economist, man is regarded for culture as an intelligent productive force, and in another stage to which we are advancing, that of the general use of machinery, he may be defined, as my

colleague Jules Simon, of the Institute, defines him, as an intelligent director of productive force, valuable to the extent and quality of its yield."

Man as an Investment of Capital.

"I venture, as a rudimentary economist, and as a humble servitor of the superior scientists, to claim a place in which I invite your consideration of man as an investment of capital, as a 'pecuniary transaction,' in relation to whom we have to consider the means of rearing him with the view to the return of the highest percentage of profit over and above the cost of his nurture as a return for that investment. I believe he will gain more by that mode of treatment than by most other current methods, that he would add to any other values he might have, and enhance his self-respect, and his estimation by others, if he could be led to consider himself in that point of view, and not 'throw himself away,' but study the conservancy of his force by temperance, and its productive application by attention and skill. Isolated facts of the material order are entertained in the way of objection; it is important that the complete facts of that order should have their position in support of progress. As a general rule, excessive sickness involves disability to work, premature mortality, loss of productive power, loss of capital. The sensual excess, occasioning enervation, which the sound theologian denounces as sin; the depredation, which the criminalist condemns as crime, the economist may condemn also, but in his view, as waste.

"In aid of moral, religious, and sentimental convic-

tions on the subject, especially with some minds with whom those convictions require support, I would beg to submit economical considerations upon it, the which, lowly though they may be, in their esteem ought really to be taken into account on the question of national interest and duty. The public and private waste from ignorance, from ignorance of physiology, or from the neglect of sanitary culture, is enormous.

"In Glasgow, Manchester, and other hives of manufacturing industry, of all born, nearly one-half are in their graves before their fifth year, and those who survive do not last in working abilities much more than one-half the time that, with proper early nurture and continued economy, would be the full duration of their force. This waste of the national stock is as it would be with the farmer, if he had to rear two colts to obtain one working horse, and as if the horse when reared did not last in working and productive condition much above half its natural time.

"I beg to exemplify more particularly the waste actually occasioned by neglected, or by perverted culture.

"The common average expense of any child from infancy for food and clothing, cannot in any district be put down at less than 2s. a week. At fourteen years of age he will have cost £70; but at the ordinary expenses of well-managed unions, he will really have cost more than double that, or 4s. 6d. per week; and at fifteen years of age he may be considered as an investment of £180 of capital economised for production. If from that period he remain a pauper, there will be thenceforward a loss of the return of wages necessary to replace the cost

of his subsistence, and also a loss of the profit or payment to the capitalist, his employer. If the boy turns mendicant, he will thenceforth not cost less, but generally more, to the community, though the cost will be differently levied. If he turn thief, he will be maintained by the community far more expensively, for he will be maintained by spoil or in gaol. In whichsoever condition he may live, in prison or out of prison, the loss to the community for the remainder of his life, which from the adolescent stage would, according to the insurance tables, be about forty years, would not be less than about £400, in addition to the original outlay during the infantile and juvenile stages. In the educational conditions which prevailed formerly with the pauper children under parochial management, and which still prevail extensively under the ill-regulated union administration, only one out of three orphans become productive members of society, and the loss of capital to the public is not less then £800 upon every three orphan and destitute children thus reared. These educational failures, or the creation of those future objects of penal administration, correctly characterised in old English as 'wastrils,' still go on, from the default of legislative principle, at the rate of many thousands per annum. There are upwards of 20,000 always in prison, and regularly to keep up that prison population there must be more than 100,000 of them at large.

"From the examination of runaway apprentices, it appeared to be a common cause, that the work they were put to was painful to them, so painful that they ran away at the first effort. By a change of system, simultaneous teaching to large classes, which can

only be got together by aggregations of numbers, on the half-time system, and by physical training, which imparts aptitudes for labour, entirely different results are obtained, and now the children of that class are readily taken into service without apprenticeship fees, and the moral failures, that is to say, what I call moral failures, the failures to get into places of productive service, and to keep them, are utterly inconsiderable. We may now safely undertake that, give us young the children of hereditary mendicants and delinquents, and we will confidently undertake that the vicious succession shall be broken, and that they shall be mendicants and delinquents no longer, but honest labourers and producers. We can show where, with combined physical and mental training, this is done.

"This physical training under a proper elementary system begins in infancy, and in teaching children the use of their fingers, in plaiting, little modelling by the German method of the Kindergarten, which you may see at the Home and Colonial and other model schools. The instruction of the hand and eye is continued in an advanced stage by teaching elementary drawing, which is done before the tenth year and a half. The military and other naval drill teaches them prompt attention and simultaneous movement, lifting together, pulling together under, using their hands and arms and legs. Superadded to the military drill it is proved that systematised gymnastics give to three the efficiency of five for all purposes of ordinary labour.

"Let me expatiate somewhat on the economical gains specially derivable from such culture. At present, by rude and accidental circumstances of

physical domestic conditions a large proportion of our population do obtain a valuable though rude and imperfect physical training, which ought not to be interfered with, but rather accommodated and promoted. It begins with errand going, parcel carrying, dinner carrying, water fetching, pumping, the use of the broom, the shovel, and the like—all of which I regard with respect, and consider that the scholiast ought to be taught to do so too; for work, negatively by the exclusion of the vices of idleness, is to be regarded as morality. Howsoever it may arise, the fact is that with all his defaults, the British labourer may be set as the foremost in the world, except some North American or New England labourers who keep pace with him. Two English labourers are equal in efficiency to three Norman labourers, or to three Danes, or to three Norwegians, or to three Swedes, or three Germans. Therefore, though his wages may be a third higher, the result to the capitalist is the same, and he saves in time, moreover, and in labour of superintendence and certainty of result. Mr., now Lord, Brassey, who has made railways in France, in Italy, in Germany, in Russia, and in India, has told me that, with the exception of about 10 per cent. in one part of Germany, and about 40 per cent. in earthwork in India, he found the higher priced labour of England as cheap as any in the world. Other engineers have given me the same information.

"Now, what is the economical result of two having the efficiency of three. It is that you save the food, the clothing, and the house-room of the third—in fact, that you save a third capital, or create a fund, which may be divided as extra wages between the

other two, as in point of fact it is to a great extent, leaving some extra profit to the capitalist. In the generality of this condition a third population is saved, and the same economical strength maintained. I believe it is owing to this superiority of its labour that England is economically equal, if not superior to, France with her larger population. But of this extra wages, our labouring population spend some £60,000,000 per annum in stimulants, three-fourths of which they would be better without. What may not be expected from a population to whom an improved education imparts temperance and frugality; —and, more of self-estimation! Whatsoever moral or other worth a labouring man may have, the agricultural labourer may be told, for his self-estimation and care, that he has invested in him the capital of a first-rate team of horses, or of two hunters; whilst the artizan may be admonished that he has in him the capital of a twenty horse-power steam engine.

"In a national system of education, in the economical point of view, the practical maintenance, and the improvement of the economical efficiency of the stock of labour of the country, is to be regarded for the production of net economical results. We ought all to be economically elevated by a national system of training and education, so as to pass as honoured and 'discounted bills' of our several real values. For this purpose, and for all national purposes, instead of sacrificing labour to the behests of the school, as educationists commonly demand, the school teacher should be required sedulously to study and accommodate himself to the behests of labour, of domestic and other productive occupation, which he has hitherto neglected to do. It is a primary principle

of the economical reform of education, that earning and learning should be carried on as closely as possible, at the same time, on the half-school time principle. For this purpose a balance has to be maintained between body and mind, and over bodily work, and under bodily work; over and under mental work has each yet to be avoided. My colleagues of the Factory Commission of Inquiry made a first step in this direction. We laid down the principle that to work a young child the same stages as an adult was, as the physiologist agrees, injurious to the working stock of the country, and was economically as wasteful as working a young and growing colt the same stages as a full-grown horse. I had charge of the Bill, and inserted the provision limiting the infantile labour to six hours' daily task, leaving the employers to provide double sets to keep pace with the adults How, it was objected, could we prevent the child who had worked part of a day in one set, being taken in another name to another factory to work in another set during the same day? In answer, I pointed to the provision which was required as a condition to employment, that the child should produce a certificate of his having been three hours a day in a school the week preceding. Whilst this compulsory provision is a security against overwork, it is at the same time a security that three hours at the least shall be taken from the adult stage of work everywhere in favour of the growing child, and it is moreover, at the same time, a security against exclusion from education. Where the provisions of the Act are carried into operation, it has answered our efforts most satisfactorily. Under it there are fewer deformed and stunted

workmen than formerly; it has preserved the working population from much deterioration by overwork; and it has also, by the half-school time, under proper teachers, been the means of imparting an extent of elementary education in the three hours' teaching, equal to that imparted in the national schools in six hours."

Education in Relation to Inventive Art.

"The great progress of mechanical inventions, and of labour-saving machinery, now, however, reduces our advantages, in the amount of physical power and energy of our wage classes. It gives an advantage to the weaker but better educated foreigner, as an intelligent director of force, *i.e.*, of machinery. The English labourer has hitherto in great measure made up the defects of his education and his want of general intelligence, by his exclusive devotion to one thing, to one subdivision of labour, to the working of one machine. But now the changes of machinery more than ever necessitate changes of occupation, and the revolutions of countries will often change the seats of manufactures. An improved technical and art and science education is needful to enable the British artizan to learn quickly to direct the new forces, to enable him to change also, and to keep pace with them and advance his position.

"Educationists and the public generally are unaware of the grievous failure in intelligence of the British workman in the direction of such force as he has already to deal with, and of the great loss of life and limb that is occasioned by it. Our losses from violence amount to an average of 11,000 per annum, in England and Wales. Of these about 5,000 are

reported as having been occasioned in the use of steam power and machinery. Sir William Fairbairn has, perhaps more than any one man of science, investigated the causes of the steam boiler explosions occurring in Lancashire, and he has declared that they have for the greater part been occasioned by the ignorance or the clumsiness of the hands to whom they were entrusted, and to the want of scientific knowledge and of general intelligence. Other evidence is to the same purport. The frequency of such events, their separate occurrence, their sameness as newspaper paragraphs, brutalises us, and destroys our conception of the aggregate amount of the evil. Five thousand killed annually! Why, that is five times the annual number of men who were slain outright in the field or on the deck during the last twenty-one years of war! What should we think if more than half the police force, or all the guards, or more than four times the number of the Lords and Commons were brought together and visibly blown to pieces, scalded to death, crushed to death, and presented to the sight, with the agonised bereaved friends and relations? And yet this is one sacrifice to ignorance, bodily clumsiness from defective training, which we have to remedy. And here is another. By the absence of mothers, or by their occupation with labour—by the want of infant schools, there are about fifteen hundred children burned or scalded to death every year!

"I have spoken of the general labour and productive power of the wage classes of the country, being as three to two against most continental labour. But by the improvement of the general physical training of the population under the half-time system, we may

effect an improvement upon ourselves, by imparting, as is proved, to three the efficiency of five, for all purposes of ordinary labour. Such an improvement of the working stock of the country, such an augmentation of its productive power, is a result which, I submit, would justify the application even of a national rate if it were necessary to obtain it, as a means of a great national economy."

In the concluding part of his argument on economics of education, the author insists that the value of land or rent rises to a greater or lesser degree with the skill of the labour exercised upon it in accordance with the old maxim, "Tant vaut l'homme, tant vaut la terre." That nothing is so wasteful of capital from inaptitude and unskilfulness, from idleness, from mendicity, from delinquency, from depredation and from spoil as ignorance. That under an improved mixed physical and mental training the capital, invested in human beings, may, by increased aptitude, be rendered more productive in every way, and the periods of working ability or its productive duration be extended. That increased aptitudes will be imparted for meeting changes of occupation on the failures of particular sources of demand. That over-burthened labour markets will be more readily relieved of redundant hands, and net wages augmented. That any increase of educational rates wherever needed will, under a correct administration, be an economy; and, that by a general and complete elementary education, on the principles stated, the productive power of the country may be augmented by one-third.

CHAPTER XII.

FAILURES IN NATIONAL EDUCATION.

WE have seen in various former chapters how urgently the half-time system of education has been insisted on. Indirectly too we have had a view of the converse, namely, of the evils of the long-time system. But there is one special essay treating on the long-time system and the mischiefs it engenders, which, at the risk of some incidental repetition, I must notice, the subject-matter being so excellent, and the information adduced so accurate and complete.

The essay which is next to be condensed is a little work published in 1881, and entitled briefly "National Education." It is in fact a *résumé* of collections of evidence, prepared for the Educational Section of the Social Science Association at Edinburgh, and much of it was translated into French, and submitted as a paper at the International Congress at Brussels. In the opening pages of the work there is set forth, in special details, a considerable number of the arguments which have already been before us. Then the "half-time system" is described, after which the evils of the long-time system form the matter of the discourse.

"One cause" says the writer, "of the little progress

made in elementary education is that information relating to it has generally been confined to the cloister, a very moat bounded by the four walls of the schoolroom. The children are seen to depart from the school, and there is very little outlook as to what becomes of them afterwards, or what has been the result of the educational work performed. I have myself derived great advantage from inquiries as to the outcome, as to the difference in results, between educated and uneducated force in the army and the navy,—where the results on masses are best seen,—in the manufactory and in the workshops, and in the fields of agriculture. On the whole, the results are favourable; education as it commonly exists, under the continuance of the present system, is worth having where none better can be got. But the long-time teaching has large physical drawbacks. The first evil is a reduction of aptitude for physical labour and steady industry.

First Live, then Learn.

"We must keep in view, as a cardinal maxim, as the first objective point in all popular elementary education, the *Primo vivere, deinde philosophari.* Long desk-work makes labour painful to the pupils at the outset. It is said, in manufactories, that their backs are stiff and that they cannot bend to work. It certainly tends with us to overcharge the labour market for sedentary service at the expense of agricultural service. It is now a subject of wide complaint in our rural districts, that the eyes of children taken into schools, under the new compulsory law, are seriously injured. We see such

a result elsewhere in the large proportion of the soldiers who are spectacled in some of the more educated States on the Continent. Then as respects females, we find that curvatures of the spine are seriously frequent in long-time schools where physical exercises are deficient. Certainly the common schools are the centres of children's epidemics, as sanitary science would expect from the massing of dirty-skinned and dirty-clothed children together for a long time in ill-ventilated rooms. This particular evil the half school-time principle reduces decidedly and immediately by much more than one-half.

"With us, and in France and Belgium, there are complaints of the increasing scarcity of competent agricultural labour, and of the tendency which the population shows to seek the more sedentary or more interesting society of the towns. This evil agriculturists are beginning to trace to the defective character of their education, which fails to interest them in rural life and rural occupations. This great and growing evil I have long perceived, and have endeavoured to point out the remedy in the application of the half-time principle, which would give part of the day to the school, and part of the day to the field, while that part spent in the field, under special teaching, would awaken more interest in the practice of the specially applied science needed there. We have complete proof of the power of creating special technical interests in the new half-time training schools for the army and the navy. The pupils there are free to enter civil life; but both at the military schools and the naval schools the great majority volunteer in the direction of their special

training, and the commandants are glad to have them. It has been proved, in respect to the navy, where many of them become warrant officers (or *sous-officiers*), that if the children had not been orphans the expense of their training would still be remunerative as against the untrained or ill-trained hands, the sons of fishermen, to be found in the seaports.

"An American naval officer, Mr. Faulkner Chadwick, was deputed by his Government to examine the different naval schools in Europe, and he pronounced our naval half-time school at Greenwich to be superior, as a model, to any he had examined on the Continent. It is superior as tested by the outcome. On such experiences, and some direct agricultural experience, I could confidently undertake that the grievances of which the agriculturist party complain, of the want of interest in their service created by the common education, admit of a complete remedy by the competent application of the half-time principle.

Moral Failures from the Long-time System.

"A darker feature is yet to be noticed in the present long-time system in England and elsewhere, in the extent of the moral failures that are overlooked by confining the view to the scholastic results and four walls of the school, and disregarding the real object of attention,—the outcome. The criminal classes with us, of whom there are about a hundred thousand at large, sustain a population of some twenty thousand always in our prisons. In our small army there are some twenty thousand court-

martials yearly, and a number equal to a fourth of the British force at Waterloo has passed through the prisons annually. I specify these failures in the army the more particularly, because the outcome of the army half-time schools demonstrates, that by a general application of the principles there in operation, no such extent of failures as those displayed in the outcome of the common elementary schools could take place. Two-thirds certainly of our soldiers have partaken of an education not materially inferior to the long-time education, of the extension of which under a compulsory system our Education Ministers are boasting.

"The education of some of the prisoners is set down as superior. In the criminal returns of the metropolis there are more than a thousand clerks, forty-two lawyers, besides a considerable number of other persons who have necessarily received a middle-class education. The governor of one of the prisons told me that the greatest rascal he had in custody could write out Our Lord's Prayer in seven languages. My functions have been that of a civil administrator, having to deal with the civil officers of the different religious denominations impartially; and it is just to state, as respects some of the religious denominations, that the effectiveness of their teaching is marked by the extreme rarity of the appearance of any of their flocks amongst the criminal classes. It is equally due to the chief half-time schools to state that the appearance of their pupils is not less rare.

"On an inquiry as to the outcome of some middle-class educational institutions, it was shown, that the failures of their pupils from misconduct, disqualifying them from suitable service, averaged twenty per cent.,

whilst the like failures of the pupils of low parentage, in good half-time schools, does not average more than two or three per cent. The average had formerly been as high as sixty per cent. among pupils taken from the same classes. The like failures of long-time school systems are denoted by later observations of the outcome in America and on the Continent. By some political writers the elementary school system of America was held forth for imitation; but its outcome is now regarded as fraught with great failures. 'What a terrible satire upon our boasted school system is denoted by the word "educated,"' says the *Philadelphia Times*. 'Nine-tenths of the young criminals sent to the penitentiaries have enjoyed school advantages, but three-fourths of them have never learnt to do an honest stroke of work. Our children have their poor little brains crammed full of all kinds of impossible knowledge of names and dates, and numbers and unintelligible rules, until there is no room left to hold any of the simple truths of honour and duty and morality which former generations deemed more important than all the learning of the books.'

"Professor Dr. Robert T. Dabney, Principal of the Hampden Sidney Seminary, U.S., observes: 'That where the State school system,' *i.e.*, the elementary school system, 'is in its infancy, as is evinced by the sparseness and poverty of the endowments, the greater penitentiaries and almshouses are few and small; but when the observer begins to admire the magnificent endowments and palatial buildings of the public schools, he is also struck with the number and vastness of the prisons. The two kinds of structures go together.' In France it is now found

that the largest contingent to the delinquent population of the prisons is the outcome of the State schools for orphans and foundlings.

Disposal of Juvenile Delinquents.

"Public attention has recently been strongly directed to the question as to the disposal of juvenile delinquents; and upon it I asked the manager of one of the district half-time institutions whether he had had cases to treat of the description of one kind of habitual criminality brought prominently before the public? He stated that he had, and that in a few months a large alteration in their character had been effected by the physical and industrial training on the half-time principle. If, say, a hundred of cases of that character were committed to his charge, what proportion, I asked, could he undertake to send to the good? He answered confidently that, with fair support, he would undertake to send full ninety per cent. of them to the good; a large reverse of the proportion that prison discipline returns to the bad! The manager of longer experience in a larger institution in the metropolis would undertake to send ninety-five per cent. to the good.

"The distinct formative effects of physical and mental training, in the efficient half-time training schools and institutions, and the reversal by them of the ordinary outcomes from the common long-time schools, especially in the eradication of incipient criminal habits, are owing to differences of conditions which it is important to note.

"In the long-time schools during the time the boy is kept there waiting under restraint his mind is

absent from lessons, which are commonly so uninteresting as to be repugnant to his voluntary attention; his thoughts are away on cricket, or some sort of pleasurable play, and he generally only returns upon call to the lesson as a task to be got rid of. Under the restraint of separate confinement in a prison, the mind of the young criminal cannot, as shown by his action on his release, have been occupied with compunctious visitings, as justice commonly assumes; but his thoughts are of his ill-luck under the wide chances of escape of which he has had experience during all the time he has been at large before detection, and of how he may have better luck when he gets out. He is exhorted to be good: but the child of the mendicant or of the delinquent does not see his way to doing other than he has done before; and why should he while he feels his inaptitude of hand and arm for industrial work?

"Under the common conditions of restraint, in the district schools, in the industrial schools, or in the reformatory schools—all of which, comprising some thirty thousand children, are now of necessity conducted on the half-time principle of varied physical and mental teaching—the pupil is placed under entirely new and opposite conditions, by which bad thoughts are excluded, and good thoughts induced and impressed from day to day by practical work, from the like of which he may hereafter get something good.

"The didactic teacher cannot look into the mind and see what effects, or whether any, have been produced by his precepts. But the drill-master or the workmaster does see, in act and deed, the

primary moral principles of attention, patience, self-restraint, prompt and exact obedience, in outward and visible action. The general result is that the pupil gets interested in what he does, and does it with a will. Hence the reversal of the long-time and small-school system, which, from the greater proportion of the parish schools,—as I ascertained in London,—sent sixty per cent. to the bad, now sends eighty per cent. of children of advanced and hardened stages into the industrial schools and the reformatories, and at the Feltham school sends eighty-five per cent. to the good, and in the district orphan asylums, working on the lower and less hardened ages, sends ninety and ninety-five per cent. to the good—largely to the good, as the returns show, in getting even second-class places.[1]

"The teachers agree that what is now done could not be done by them on the common long-time system, and is only practicable with the factor of

[1] "The last return, from the Orphan School at Liverpool (1880), 'shows 88 per cent. of boys and 84 per cent. of girls whose conduct was *known* to be satisfactory. Of boys only 1 per cent. was *known* to be unsatisfactory. The remaining 11 per cent. covered those who had either left their places or been removed by friends, and of whom nothing certain can be fairly stated except this, that they were generally heard of at various times, and for the most part were found to be going on satisfactorily. Of the girls 8·8 per cent. were not satisfactory, but of these 2·8 were in their situations. Of the remaining 12·2 per cent. the same remark applies as in the case of the boys.' At Manchester, for several years, there has been a very thorough visitation of the half-time children in service, of which a report is presented to the committee half-yearly. In 1880, of 94 boys 1 was unsatisfactory, of 70 girls 2 were unsatisfactory. It is to be noted that on official investigation of the half-time schools, an important proportion of the pupils are found to have attained middle-class industrial and social positions."

physical exercise on the proper half-time principle. In the district schools children who have been criminals are occasionally brought in; and, from the experience in relation to them, the masters find that, instead of the bad affecting the good, the good predominate and affect the bad. Previous imprisonment is regarded as detrimental. On comparing the results of different institutions, considerable variations in the outcomes are observable, indicating differences of management, which, removable by an improved administration, would add considerably to the advance now obtained. In 1841 I was at pains to get out the poor-law administration of different educational conditions on workmen and on soldiers and sailors. The conclusions obtained as to the soldiers and sailors were, that two tolerably well-trained men had the efficiency of three that were utterly untrained; facts highly valuable. But the practice was not continued as it ought to be, and its revival for these half-time schools will be of great benefit. If, however, the half-time principle receives its due extension, which is held by the most experienced teachers to be only a question of time and the improvement of administration, the great mass of the failures which these institutions are required to deal with will be obliterated.

"Objections are made to sending children to these several institutions,—the district and the industrial schools and the reformatories,—on the score of the expense of their living. I know that the district schools admit of improvement in economy by improved central organisation and administration; but, taking all the institutions as they are, they will be found to be means to a great economy of the

immediate waste of mendicancy and delinquency, and also of a large economy by cutting off the hereditary successions of a wasteful population living on spoil, and by reducing the heavy cost of penal administration with which the country is now charged.

"Action on the half-time principle of mixed mental and physical training, as applied to the destitute classes, may be set forth as actions by the State in its parental position, on the old Hebrew maxim that 'He who does not teach his son a trade teaches him to be a thief.' The prisons, now filled with delinquents, may be said to be filled with the victims of the neglect of that great maxim.

Bad Manners from the Long-time System.

"There is yet another point of serious failure, extensively displayed in the outcome of our small common schools, and indeed of almost all our long-time schools, namely, that our children frequently have bad manners and speech. It is the observation of Mr. Mozley, the Inspector of Poor Law Schools, that 'defects of general intelligence go along with defects of manner.' To judge of this, we must try and see what our foreign neighbours say against us on this point. Speaking of the Anglo-Saxon generally, M. Dupont White says, 'He approaches you as if he would fight you, and looks as if he would rob you.' They complain of the *peu de delicatesse* in our ways. There is certainly great difference in the outcome of different schools, due chiefly to the different manners of the teachers. Military drill and discipline reduce

much ruggedness and ameliorate the common manners; and this result might be further improved by the application of precepts set forth in the elementary work on *la petite moralité chrétienne*, taught with marked effect in some of the schools of France. The very popular pictures of common schools, of the mischievous tricks and annoyances of the children, and sly evasions of the master's control, are pictures of failures, which good half-time systems tend to correct, especially when the discipline is in the hands of fitting and well-mannered teachers, and when the infant-school organisation receives special attention.

Outcome of the Long-time System in University Training.

"For some time past the superior scientific instruction given in most of the German Universities has been pressed upon attention for emulation in England. But an examination of their common outcome will modify opinions in relation to them. In some of our manufacturing towns where the living languages have not been taught in secondary education, the better educated Germans have been engaged to conduct foreign correspondence; and there they are carried along in the British course of business. But that course is more efficient than that of the German mercantile classes. By an eminent German member of a commercial house in London, who had been in business in Berlin, I have been assured that the transaction of business is about one-third quicker in London than with the higher educated classes in Berlin. The scientific and

scholastic attainments in the German Universities are certainly very complete and superior; but the pupils are frequently detained there until their thirtieth year. My direct knowledge of the outcome in applied science, derived from sanitary engineering work, enables me to state that they are put to disadvantage as compared with the British engineers, who leave their schools earlier and get into practical work sooner. Stephenson left his school at fifteen, and other of the most distinguished engineers—and such early advances in the scientific professions are now common in England—were as early or earlier in the field.

"At Owen's College, Manchester, and University College, London, there are classes of students who are really half-timers—that is to say, who are part of their day or in the alternate day in the manufactory or the place of business, and part of their time in the college. The late Sir John Rennie challenged me to give an instance of one man, who had done any of the *works* to which the country owes its greatness, who had come out of the long-time University courses anywhere. In the Royal Engineers, where there is too much time wasted in the cloister studies, officers are in responsible charges five or six years before they would be after leaving the Universities in Germany. For the middle and the higher classes, as well as the lower classes, the maxim *Primo vivere, deinde philosophari*, is becoming more and more pressing for a closer formative education for remunerative service. As a matter of fact, those who are earliest out and amidst practical applications distance those who remain the latest in the University.

Outcome for Good Manual Work.

"The outcome of the elementary education on the Continent, which has been commended for imitation, commonly presents similar results. At Zurich the whole of the instruction, the elementary instruction especially, is held forth as an example for imitation. But I know that English artizans have obtained such wages as five shillings a-day for the same sort of work as that at which the native Zurich hands earn only three francs a day. The late Mr. Brassey told me that at only one small part of Germany did he get his work done as well as by the British workers whom he imported, and paid about one-third more of wages than the long-time schooled German workers received. The great majority of the existing schools are only parochial and small, whilst the correct half-time principle requires that they should be large, with special formative appliances of gymnastics, grounds, and swimming baths, for physical training. The majority of the schools are parochial, and contain an average of about a hundred children, mostly under single masters, or single masters with a pupil-teacher.

"The mastery of a new principle for application in public administration, as I can state from experience, requires much time and labour; and our higher political arrangements commit large branches of administration to changing party political chiefs, who come utterly unprepared to deal with the subject-matters of their departments (of which I could give amusing, yet sad instances), and who usually leave before they can become fairly acquainted with them,

even if they have time to spare from party political questions. Under such official conditions, the permanent officers of departments, instead of working up to superior knowledge, work down to distracted attentions, to apathy, and antipathy roused by any troublesome new work, until they learn, as Dickens says, 'how not to do it.' The obstacles to the general application of the principle are, as I shall show, very serious, and need great determination, and strong special agencies to overcome them by new local organisations.

Maternal Long timers and School Half-timers.

"We have numerous mothers of small means who are compelled to act as schoolmistresses in the education of their own children. The mother of this class has her *crèche* on her lap, her infant-school pupil, and also her primary and secondary school pupil beside her, and she can only give to each a lesson in its turn, while she has to maintain order with several before the turn of each comes. In education she is of necessity only a "long-timer." I have heard a wearied schoolmistress of this class observe, what a pity it was that for the purpose of education children were not born all at once, in litters, so that they might all be of one class for education, and receive simultaneous class lessons. The single schoolmaster of the village school has an assemblage of pupils of these disparate ages, families, capacities, and conditions to deal with, and to get on he must have usually six classes, to each of which he can give only direct instruction, the only effectual instruction, for about one hour in the day, that is one hour to

each class. Whilst one class is being taught, the others must go on with their preparations and wait for their turn to be heard, and the master has meanwhile to repress impatient irritability and maintain order amongst them, whilst he is giving his lesson. The half-timer, who is taken into the single-mastered school, has to take his chance of getting one hour of direct teaching. In such institutions the half-timer does not get on very well; but in the larger and fitting schools, where the aggregation of numbers enables segregations and classifications to be made, there would be one master to each of the six normal classes, who would give the one class simultaneous class-lessons. The pupil in such a class has no waiting; no time is allowed him for anything but attention to the master and the lesson set by him. He is as a soldier in the ranks under the command of the *sous-officier*, and has to keep pace with the rest. The pupil under these conditions receives as much attention as he could do under a single tutor.

"I have gathered from school teachers of experience in different parts of England, and also in France, that the receptivity of different tribes or races differs considerably; that the receptivity in the northern counties, as in Lancashire for example, is as three to two greater than amongst children of the southern counties; but that even the receptivity of these northern children of the elementary school ages is exhausted in less than three hours of direct simultaneous instruction, even if it be made, as it ought to be made, interesting to them. The half-timer, as we call him, is in reality more than a double-timer, in respect to the amount of instruction

which he gains under simultaneous class teaching in the graded school, as compared with the pupil under instruction in the village or the single-mastered school."

From this point the author solicited particular consideration to a statistical analysis, made up from official experiences, of progressive applications of aggregations of pupils, for segregation and simultaneous class teaching. He directed attention to the progressive gain of time, accompanied by gain in quality, as denoted by increased salaries to the teachers, with increase of teaching power; by progressive reduction of expense, with the training of more than two pupils well, and with a gain of productive time to them, at the cost of teaching one pupil ill on the common system.

In education this principle would serve for the attainment of the great improvement needed in the quality of the teaching power, on the profound maxim, based on the imitative nature of children, "As is the teacher so is the school."

"The wider and closer observation of experienced school inspectors," he added, "goes with my own, as to the great influence of the schoolmaster's or the schoolmistress's social position (which commonly involves manner), beyond similar methods of school teaching. 'As I go from school to school,' said Canon Mosely, 'I perceive in each a distinctive character—which is that of the master. I look at the school and the man, and there is no mistaking the resemblance. His idiosyncrasy has passed upon it. I seem to see him reflected in the children, as so many fragments of a broken mirror.'

Choice of a Teacher.

"In the choice of a teacher there should be sought that appearance of health which denotes equanimity of temperament; cleanliness, neatness and propriety of dress, a fine-toned voice, and a patient, firm, yet quiet, kindly and engrossing manner towards children—such a manner as you would like to have impressed on your own child. One who is in weakly health, implying bodily irritability and mental suffering; one who is pained by children's free, natural expression of a joyous nature, and who has no sympathy for it, is unfit for teaching; as is one who is of a coarse, harsh, and impatient manner, whatsoever may be the completeness of his scholastic knowledge. The requisite qualities of manner and person for school teaching are very rare with us amongst men; they are less rare amongst women; but they are, from social position, frequent amongst ladies, and the most observant inspectors have agreed in the importance of special measures for obtaining the services of ladies for the most formative stages of life—the infantile stages. Good infant-school teachers have represented to me the importance of applying the service of ladies to the earliest stages of life—for the wage classes that of the *crèche*—of which I think there can be no doubt. Other considerations also render it desirable that the service of female teachers should be applied to higher ages than at present in this country, as is done successfully in America; and that the place of teacher should be made eligible for ladies, especially in the infant schools. The principle of administrative con-

solidation enables better payment to be made for the improvement of the quality of teaching power on the half-time principle; lessens the strain of teaching, even with double sets on the same day; and reduces the relative expenses in the large schools, as compared with the small schools in which the greatest defects in manner, from inferior teaching, are mostly found."

CHAPTER XIII.

STICK OR NO STICK.

WITH a will of his own which no one can deny, the master in education who now commands our attention has insisted that in training the young gentleness should be combined with the strictest discipline. This view has led to an expression of opinion from him, the possessor of the ripest experience on the matter now living, that corporal punishment in schools for children of every class is an utter mistake as well as a wanton cruelty.

In the London School Board, when I was a member of it, we had the subject of corporal punishment on for debate. One of the speakers in favour of corporal punishment adduced the proverb, "Spare the rod and spoil the child." In reply I ventured to ask if even proverbs might not be allowed to change with time, civilisation and modifications of human views, and if, therefore, the change of the proverb into "Spoil the rod and spare the child" might not, under this nineteenth century of a dispensation, which has transformed so many Judaic sentiments, be a decided improvement? I added also, that the world would call even a weak man a coward, and cut him if he beat even a strong woman; but that it said nothing

of a very strong man beating severely even a feeble child, a perversity which seemed to me to indicate an insane state of mind on this question.

Both these ideas struck our author as in strict accordance with his own more matured views, and he waited the opportunity of saying a word of his own on the same subject in his own way.

The opportunity came in January, 1885, on the occasion of the publication of a report in the *Times* of an unmerciful beating of two children. He addressed a letter to the *Times*, entitled as indicated at the head of this chapter, "Stick or No Stick." The letter, bearing date January 14th, 1885, I publish in full, with one or two additions by its author.

"I perceive from educational returns and from discussions at educational meetings, and from continued cases before magistrates of charges against teachers, of assaults upon school children, that the question to be put of 'stick or no stick' is in continued agitation as a question of school discipline.

"I beg to be allowed to state some experiences that may serve to elucidate the question.

"Some years ago I met the late Lord Fitzhardinge in society, when I complimented him on being an advanced educationalist. 'What do you mean?' he said, 'I have nothing to do with schools.' 'No,' I answered; 'but you have, I understand, set an example in your education of horses that may serve for the education of humanity. You have forbidden the use of the stick.' 'That is so,' he replied. 'If I see a groom beat either horse or dog I dismiss him. I must say, however, that in some twentieth case we meet with a depraved brute who is only to

be subdued by physical force on a conflict, but in allowing the use of the stick nineteen out of twenty horses are spoiled.'

"We had in Poor Law administration a convocation of head school-teachers, at which the question of 'stick or no stick' was considered, when a conclusion was arrived at in accordance with Lord Fitzhardinge's doctrine. It was pleaded for the use of the stick that some twentieth case was one of extreme depravity which could only be subdued by strong force, but for the rest the stick should be taken from the hands of the pupil-teachers, and only reserved in the cupboard for very special occasions.

"A friend, Mr. Blackburn, however, displays an advance upon Lord Fitzhardinge's practice in the education of horses. He declares that the twentieth case spoken of by his lordship is in itself the result of bad early training. When Mr. Blackburn meets with a case of this kind, of a horse of bad education, instead of a furious flogging, he Rareyfies him, that is to say, he gets him into a condition of extreme inconvenience, and imparts a feeling of gratitude for getting the horse out of it. Mr. Blackburn looks carefully to the education of the colts in the infantile stage. He forbids his grooms not only not to beat them, but not to swear at them, or to speak to them in other than kind and gentle language. They are taught to attend and to act upon gentle speech. It is pleasant to see them come up to him and follow him in the field and put their heads over his shoulder. The carriage whip is only used for guidance, or to remove a fly. Others, I am told, follow the like course with entire success as to horses.

"The best of our district half-time schools have advanced with the like success to that of the entire disuse of the stick in the education of horses. Mr. Hillyer, of the Central District half-time school at Hanwell, who during the last twenty years has had 20,000 children of the lowest type passing through his hands, says that he has not used the stick twenty times during that period. Mr. Marsland, of the North Surrey District half-time school, has condemned entirely the use of the stick. There is one point on which I think it highly important that the education of children should be brought up to the good education of the colts—namely, in the use of the most kindly and gentle language to them. On visiting a common school you will hear the teacher 'rend the common air with angry and horrid speech' to them, which is in itself bad education. This alone makes it worth while to engage ladies as teachers for the most impressionable and formative period of life. Experienced inspectors have marked the great difference which it makes, and have expressed strong opinions of its importance. For the relief of such teachers, Mrs. Fielden, of Todmorden, has invented a sort of castanet, which is very successful for the direction of the chief movements of the school.

"It must be admitted that the disuse of the stick, or of the rod, is a large deviation from our old and yet accredited practice. Dame Pastor (*temp.* Edward IV.), in inquiring for a good tutor for her son, inquires for one, of whom she has heard, by whom he would be 'well belashed.' In some of the United States, itinerant school teachers go about with a large birch rod over their knapsacks as a sign

of their vocation commendatory to mothers there with the like feelings as Dame Pastor. Lady Jane Grey complains to Roger Ascham how severely she was flogged, and that in ways she would not mention. The stick was at that time the accepted and recognised instrument of domestic rule in the hands of the husband. In one old homily husbands are exhorted to moderation in its use, and it is laid down as a rule that a husband ought not to use a stick thicker than his thumb. Now a wife-beater is punished by magistrates, and is condemned with horror all over the country. The child-beater, however, is recognised and authorised. The instrument of punishment was continued in the hands of the teacher. In a memoir by the Hon. Amelia Murray, Maid of Honour to Her Majesty, she says, speaking of His Majesty George III., 'that he adhered unflinchingly to what he considered the path of duty,' and that he placed his sons under tutors who engaged that the rod of Scripture could mean only bodily punishment. 'The Princess Sophia told me that she had seen her two eldest brothers (that is to say, His Majesty George IV. and His Majesty William IV.), when they were boys of thirteen and fourteen, held by the arms to be flogged like dogs with a long whip.' 'Was it wonderful,' says Miss Murray, 'that the results proved anything but satisfactory?'' Asking a young Etonian recently whether the use of the birch still continued, 'Yes,' he said, 'it still flourishes; we had a duke horsed the other day, but we don't mind it.' Then of what good is it?

"There is, however, a very large distinction of bodily condition to be observed between boys of the Eton

class in the infliction of a punishment which "they do not mind," and who get their lessons very much how and when they please, and children of the class now brought into the board schools—children of the lowest physical type, frequently ill-fed, and bodily as well as mentally depressed, and incapable of bearing long hours of detention. With these latter a stripe, which the former do not heed, is a festering wound, and a long and serious injury, which mothers frequently show to magistrates and excite their compassion.

"Where a school has been changed from a long-time to a well-organised half-time school, with appliances for physical training, the non-attendances have been reduced to one-tenth the previous number. They are reduced largely from the fewer absences from sicknesses occasioned by detention during long hours amid filthy-skinned and filthily-clothed children; and by the lessons being better adapted to mental receptivity. By the reduction of these irritations, and lesser provocation of the pupil-teachers and the head teachers to use the stick, school headaches are also reduced in teachers as well as in pupils under the half-time system.

"On the whole it will be found on sufficient experience, that the stick, and the 'tawse,' and the rule of terror will have to be abandoned for the more efficient rule of kindness in the treatment of children in every stage of school life."

CHAPTER XIV.

THE INTRACTABLE CHILD.

THE view that children can be easily taught and well cultivated without being punished has often been disputed as inapplicable in examples of what are called intractable children. Here it is argued punishment must be necessary, and the following case was adduced as an absolute proof of the truth of this old and firm belief:—

"As long as there is no human Rarey, what is one to do with a boy of this sort? He is aged eight, he is a liar and a thief, has attempted to set fire to his house two or three times, has been turned out of several schools, killed a cat and a parrot, and is most incorrigible; beating has no effect on him, his mother and relatives are afraid of him, and no one can control him. Such is the problem placed before Mr. Sheil at Westminster yesterday by an anxious mother. Mr. Sheil, however, could not answer the question, and merely suggested beating, beating, and again beating; but meanwhile the unhappy parent is wondering what will become of the boy. Perhaps a week or so on a Hull fishing smack would have some moral effect on him, or he might be turned loose in one of the vast deserts in

Patagonia, or the Sahara, or Gobi, without much danger to any one but himself, and give full vent to his juvenile ferocity."

To this illustration Mr. Chadwick wrote the following short but practical as well as humane reply:—

"As chairman of a special committee of the Society of Arts, on the operation of the New Code, I have collected the most recent experiences on this special topic of dealing with refractory children. I sent the statement of the case to Mr. Marsland, the superintendent of the district half-time school at Anerley, and asked him for his observations on the case. I give his answer to it:

"'There needs no human Rarey to deal with a boy of this sort. Place him in better surroundings, give him no time to steal, ask him no questions for some time, and his habits of lying and stealing will die a natural death, much quicker than by any amount of beating. Quite lately, I had a boy with an inveterate habit of getting up in the night-time and stealing from the clothes of his schoolfellows who slept in the same dormitory. I put him through an extra course of gymnastics before going to bed, and tired nature improved his moral nature. My remedy for a bad habit is to fill up a boy's waking time with thoughts and actions of as pleasant a nature as possible, and with such a genial supervisor that the delight he takes in his new life leaves no room for his old life, and then send him to bed too tired to talk or do anything but go to sleep. Constant employment of time made as pleasant as possible never fails to alter and improve what are called incorrigible boys. The suggestion in the

article would not meet the case, unless there were added to it systematic and constant occupation.'

"Other managers of the district schools have given answers of the like tenour, but that extraordinary cases receive special observation and individual treatment. The common suggestion and the common practice in such cases as that cited is to commit such offenders (perhaps of a little more advanced age) to a term of imprisonment, and to order them to be whipped. The managers of the district half-time schools generally consider such treatment to be injurious, and would prefer taking in the children without any previous punishment whatever, and would not give any to them. Mr. Rogers, the chaplain of the Pentonville Prison, has shown that boys who had been whipped most frequently return to prison. The course is to take the child in as a presumed innocent lad against whom nothing is known or cared for. He is at once put under conditions that are entirely new to him. In the morning he is aroused out of sleep to attend to his head, to foot washing, and dressing; then he has to go with others to his breakfast; after that to the school, where with his class he is kept to the simultaneous class lesson without waiting, and to which he willingly gives himself, as it is not over-wearisome, like the lessons of the long-time schools. He may next have to fall in under the drill-master or the gymnast, and if he stumble or fail he is jeered by the other pupils, or reproved by the corporal; but he soon participates in the zeal and competition of common lively action. He may the next day have a swimming lesson, when if he does not mind what he is about, he may sink and be drowned. He may next have some naval exercise

at the mast, where, unless he holds on, although a net is spread to receive him, the shock will be very severe. Then—if he is old enough—he has to go to the workshop where the workmaster in carpentry, shoemaking, or tailoring keeps the mind, with the eye and the hand, of the pupil intently occupied. His day's occupation may be varied by freehand drawing, so useful for handicrafts, or by lessons in singing; or, if he be a very good and apt boy, by lessons in instrumental music. The enumeration of the incessant occupations may suggest severe labour; but the course is varied by 'relief lessons,' and it becomes so little irksome that an interruption is disagreeable, and exclusion from any part of it is actually felt as a punishment. When some parents exercise their right of taking away children from the district school, the children are not glad, but commonly cry at having to leave the institution, to part with their playmates or their workmates, and to go home. As the physical and industrial exercises have been improved, desertions have diminished, and the outcome improved. From morn until night bad thoughts are, indeed, excluded, and comparatively good thoughts —thoughts of doing better for themselves by work and wages, and by honest and esteemed position—are generated and impressed. The sanitary results of this course of physical as well as mental training are that the sickness and death-rates are less than a third of those prevalent among children of the same age in the outside long-time schools.

"The children are commonly brought into these institutions, and also into the industrial schools, with hands and aptitudes unfitted for any industrial occupation, and only with aptitudes for picking and steal-

ing; but they are sent out with aptitudes for industrial occupations, and, as a general outcome, some 90 per cent. are got to the good; and in the better industrial half-time schools, where the children are older and in more hardened conditions, more than 85 per cent. are commonly got to the good, which of itself is a large and hitherto extraordinary transformation. It may be observed that the cost of teaching and training power in the district half-time schools is less than one-half that of the London long-time board schools, while the mental results are superior. It is found that the attainments of the orphan children who have been taught in the board schools are, in a marked degree, inferior to those of children of the same ages in well-organised half-time schools. It is, however, due to state that the chief teachers in the board schools ascribe a loss of full two years of school time by every child to the restrictions in teaching imposed by the Code. These, however, are topics which, it is to be hoped, will receive the attention of Parliament during the next session, and also the enormous injuries occasioned by neglect of physical training, which largely affect the moral, as well as the sanitary, conditions of children. Meanwhile, it may suffice to aver that it will be found on examination that the difficulties experienced by magistrates in such cases as the one cited are solvable by the curative and preventive course of treatment prevailing in good district and industrial schools."

CHAPTER XV.

ON CONSTRUCTION OF SCHOOLS.

SO soon as the new school board regulations came into force, the mind of our author was directed to the subject of school construction. "Never," he expressed to me more than once, "never was a more important national question at stake. If the schools that were about to rise in every district in England, were built on a bad principle; if they were of unhealthy construction; if they were so constructed as to be unsightly inside and outside, they would miss half their national usefulness. They would leave on the minds of the young as well as on the health an unfavourable impression. On the other hand, if the new schools were healthy productions, cheerful, artistic, and erected in the best and prettiest positions in every neighbourhood that claimed them, but above all were healthy, they would of themselves be lessons ever to be remembered by their scholars with satisfaction, pride, and pleasure."

Under the influence of these ideas he wrote an essay on school construction,—read at the Annual Congress of the Social Science Association in October, 1871,—of which the following is a full abstract.

Principles of School Construction.

"Now that new school boards are preparing for the construction of new school rooms, it is of importance

that they should be apprised of the sanitary defects that require amendment in the greater proportion of the existing elementary schools in this country. Medical officers of health have concurred in declaring that the common elementary schools, as now constructed and conducted, are the frequent centres of childhood epidemics. An excess of upwards of 7,000 deaths in the metropolis, and of upwards of 50,000 annually throughout England and Wales, in the school stages of life, were pronounced by them, on the observation of the working of particular schools within their province, to be largely attributable to the structural condition of the school-rooms, and to the modes in which the children were kept in them.

"The chief sanitary defects of these schools are, (1) Defective ventilation; (2) Defective warming; (3) Bad drainage and foul latrines; (4) Want of means of maintaining personal cleanliness; (5) Bad lighting; (6) Bad arrangements of desks and seats; (7) Want of proper means of gymnastic exercises; (8) Insufficient, and ill-paved playgrounds. I would submit that it is important that school boards should require, in the competition for plans, that these evils should be first specially considered.

Warming.

"I will, in the first place, treat of the warming of schools, as that largely influences their ventilation. To me it has always been most painful to observe the condition of children of the common schools in winter time, going there in cold and wet, in driving sleet and snow, frequently ill-shod, and commonly ill-clothed—kept in the school with feet

and hands painfully cold—fingers often so benumbed as to be scarcely able to hold the slates and pencils; the open fires at one end of the school, not freely to be approached, and when approached, the warming or heating on one side, "roasting in front and freezing behind," so as to give inflammations or colds from the disturbed and unequal circulation. The confinement of the children for five or six hours in such conditions, overtasked mentally, and painfully constrained bodily, are surely evil conditions requiring active intervention for their relief.

"One consequence of the defective warming is, that doors and windows are shut 'to keep out the cold.' Then comes the pernicious effect of the confinement of the children in the atmosphere polluted by their breaths and by transpirations from their skins, usually unwashed, or only hands and face washed, and from dirty clothes. As a relief, some of the windows are in part opened, and the cold air is let in for ventilation. The corners where this is done have been called "rheumatism holes." Sometimes, when the windows are kept closed, the confined air is heated to an extent that creates perspiration, even in winter time. Eruptive diseases are often the consequences of precedent functional derangements, and when there are outbursts of epidemics in children's institutions or in large schools, they frequently occur among the children grouped at one end, and the first case observed is a new comer, who has been for a time the centre of the group attacked, the infected breath having been pumped out upon the surrounding children for several days before the eruption has appeared on the new comer. Thus, in the ill-warmed schools, in which

windows and doors are kept closed to keep out the cold air, foul atmospheres, poisoned by the incipient diseases common amongst the poor, are created for the children. In some weathers and school conditions, a mother in sending her child to such schools, is sending it into a preparation of fever, or into measle-mixtures, or into small or chicken pox, or some form of disease. Children thus infected in the schools, frequently bring the infection into crowded and ill-ventilated homes, where several sleep in the same bed. If surprise is expressed at the sudden extensive outbursts of epidemics in crowded habitations, here is one contributary source of them. Compulsory attendance in ill-warmed and ill-ventilated long-time schools is commonly compulsory bodily deterioration. Such conditions also endanger, and frequently ruin, the constitutions of teachers. It is proper to mention, as respects the higher class of female schools, boarding schools as well as second-class schools, that great pain is inflicted, and bodily disorder occasioned by heads kept heated by unduly protracted mental labour, and feet kept cold by bodily inaction.

"By graded schools, as I have shown, especially by half-time schools, three children may be taught well in half the time in years, for the expense now commonly incurred for teaching one comparatively ill. The School Board for London have set an important example in the adoption of large school organisation. But such provisions entails the necessity of sanitary precautions, for if they be neglected, especially as respects the classes of children to be brought in by compulsion, considerable bodily injury will frequently be occasioned. I submit that the first object is to

improve the method of warming as involving the method of ventilation.

"Of the modes of warming, those by hot water pipes and iron surfaces are of inferior, and sometimes, when for high heats, are of pernicious effect, and are very expensive. Besides, they are apt to warm only the sides of rooms, or the upper parts of them, and to leave the feet cold, unless an inconvenient and objectionable degree of heat is created over the whole room. It is, moreover, matter of considerable experience that warming by earthenware surfaces, or stone surfaces, especially by heat diffused over wide earthenware or concrete surfaces, is more agreeable and more salubrious than any warming by iron surfaces.

"Observing some ragged boys at night grouped upon a particular street-pavement, and apparently enjoying themselves, in very inclement weather, I found that the pavement on which they were assembled was warmed by a baker's oven beneath. It is observable that market-women, with a foot-warmer, sustain very inclement weather. The like facts, which I might multiply, appear to me to lead to the conclusion that there are no means of applying warmth, that are so economical as by applying it to the feet.

"The class of facts on this topic lead me to recommend that we should adopt the practice of two empires, of Rome and of China.

"The Roman plans of floor warming are displayed in the remains of villas found in the chief seats of their occupation in this country. Their hollow floors were mostly made by square slabs of stone, or of large tiles, supported by stone pillars eight inches high, or a foot or more set upon a lower stone floor.

The upper floors were covered with concrete, and often ornamented by tesseræ. Some of their hollow floors in this country were evidently warmed by coal, from the remains of coal soot, in others they were warmed by wood. The fireplace, for the coal-warmed flooring, was mostly a small cylinder of red earthenware, containing a mere hatfull of coal, through which the air was led by a down-draft, through the hollow of the floor, the draft being created by an upcast flue on the side of the chamber opposite to the fireplaces, the tall chimney-flue acting as the longer leg of an inverted syphon. In some of the largest Roman constructions of this species the heat appears to have been led underneath by long, distinct channels. But in some the warming was by the diffusion of heat through the floors, amidst the uprights, which, I conceive, would be done by low heat, led slowly, but long applied.

"I am informed that in the barracks in China, constructed on the English principle of the open fires, men were frost-bitten, whilst the Chinese, with their mode, were perfectly unharmed. The Army Sanitary Commission of the United States adopted the principle of this method of warming for field hospitals. A trench, covered with wide slabs of stones, was led from one end of the tent to the other. On the outside, at one end, a fireplace was sunk at the mouth of the trench; at the other end a chimney was erected of clay, held together by empty barrels piled on end. In this way a draft was created underneath the stone floor of the tent, warming it in the most equable and agreeable manner. Americans attached to the ambulance corps applied the same principle, with complete success, to the warming

of the field hospitals in Paris. General Duff, of the United States Army, informs me that he applied the principle, by rough and ready methods, for the warming of field tents for his soldiers. The warmed floor in its proper use, however, appears to me to have the peculiar advantage of supplying a colder and thence more condensed air, a better quality of air breathed than any heat-expanded air.

"The effect of foot-warming is then to enable the body to sustain, with less discomfort, the impact of cooler currents of air. Foot-warming will, of itself, allow of doors and windows to be opened with less annoyance, and will be the more conducive to freer ventilation. Indeed, Mr. Blackburn's method of ventilating cattle sheds, by an open diaphragm along the roof, would, in some instances, suffice. In many others I would propose, in addition to the warmed floor, the introduction of open fireplaces, on Captain Galton's principle of warming with air pumped in that is fresh, as well as warm, and the more active removal of vitiated air through the smoke chimneys.

"I have long advocated the principle of floor warming, but I find it expedient to propose particular means for the purpose, which I will describe briefly later on, as architects may not have access to plans of the Roman methods of floor-warming."

Ventilation.

"Next to the foul air from overcrowding, and from the breath and from transpiration, there is the foulness arising from congregation of dirty skins as well as of dirty clothes. Medical officers who have to do the work of vaccination with children of the lower

and middle class, are aware of how small is the proportion of them who are ever properly washed, and how painful, and, at times, how dangerous, is the duty of operating upon numbers of them consecutively in confined rooms. The great sanitary success of the district orphan schools is largely due to the daily ablution of the children, and to the cleanliness maintained in the clothing as well as on the persons. On visiting the Central District school I always found the female children's pinafores most perfectly clean, as if they had just come fresh from the mangle. On expressing a doubt whether this was not a luxury of cleanliness, I was corrected by the answer, that three hundred soiled pinafores made an appreciable difference in the atmosphere. The answer expressed the sanitary principle of the importance of cleanliness—clean clothes, clean skins, clean air—as proportioned to the numbers aggregated. But the massing of numbers together, however cleanly, would be, in some stagnant conditions of the atmosphere, injurious, even if they were massed together in the open air. Troops marched in close column carry their own atmosphere with them. In epidemic periods it has been found that the proportion of attacks has been diminished by marching them in open columns, or widely apart. People faint in crowds, not from the pressure of the crowd but from the atmosphere generated by the crowd. Of course this evil is aggravated by filthy personal conditions. In one ragged school the health of the teacher was frequently overcome by the stench of the scholars, and fever was frequent and rife upon them. In self-defence he forced the boys to wash in an adjoining room; but this thinned

his school, for the washing was with cold water. Cold water washing is found to be a mistake in district schools where the children are under control. The circulation of children of the poorest classes is very low, and cold water is peculiarly painful to them;—besides, washing with water which is hard as well as cold does the work of washing imperfectly. It has been found that tepid water is necessary for the purpose. The master of the ragged school, to whom I have referred, got steam passed through the water and warmed it, and he then succeeded. The washing ceased to be disagreeable,—indeed it was made, as it always ought to be, agreeable.

"In the larger children's institutions, where children are boarded, the effects of progressive sanitary improvement have been distinctly marked. In one, where the death-rate had been twelve per thousand, the foul air from cesspools and bad drains was excluded, the latrines were amended, and the ventilation was improved, when the death-rate was reduced to eight in a thousand. Next, regular tepid ablutions, with, in summer time, cold water bathing, and careful skin-cleanliness were introduced, when the death-rate was reduced to four in a thousand.

Personal Cleanliness.

"If you go into even first-class elementary schools in England whilst simultaneous class-teaching is going on, you commonly see dirty hands held up. If you go into a school of the like class in Holland, you see very clean hands held up. There, the moral, as well as the sanitary duty of personal cleanliness, as far as I could see of it, is well maintained. The

children in the female schools are from time to time examined, and the duty of maintaining the cleanliness of their children is enforced upon the mothers. If any mother is frequently negligent, marked observations are made upon her, which are unpleasant. By due exertion in this direction, the object is very generally obtained. But there are cases where the children have no proper mother's care. In some places, the poor people are absolutely destitute of the means of cleanliness, or of proper supplies of water. Accidents constantly occur to little children; they fall down in the muddy streets, or dirty themselves in playing. To deal with these cases, there is, in well-appointed primary schools, as already shown, a female attendant on the schoolmistress, who takes the dirty children into an apartment and washes them, the schoolmistress herself being of an occupation of a quality above such service.

On such experience, it is to be insisted upon that every elementary school should be provided with a retiring-room or closet, with warm water, and with the proper appliances for the cleansing of children. It is a provision of a very great importance for the infant schools of the lower districts.

"Of the lessons that may be taught in schools, the practice of cleanliness is of the highest order. The clergy who neglect to enforce the precept, "Wash and be clean," fail in the enforcement of Christian duty. A filthy population is everywhere a low moral population, but it is futile to enforce cleanliness in the absence of proper appliances for its practice. All large schools should have one bath for teaching and practising swimming. For ordinary schools a swimming bath

30 ft. long by 10 ft. wide and 3 ft. deep may be made to suffice, and it should be constructed for about £50. But for one of the larger schools, there should be a bath 60 ft. long, 25 ft. wide, and 3 ft. deep, which should be made for about £200. In crowded districts several schools might be united for the use of one swimming bath in turns, as well as for one drill ground. The objection to such appliances on the score of expense is an objection to the means of economy, for all efficient sanitary appliances are means preventive of waste. The general economical waste of productive force in this country, as I have already expressed it, is as if a farmer, in order to obtain one working horse, had to raise two colts, and as if the horse, when raised, had only half its natural and proper working ability. The economical fact should be inculcated, that a pig that is regularly washed puts on a fifth more flesh and that flesh of a better quality than the pig that is unwashed; and that the same rule holds good with washed, as against unwashed children. Five washed children may be sustained on the food requisite for four that are unwashed, to bring them up to the same condition. Besides, the washing itself is preventive of infectious and of contagious diseases, such as the itch and other diseases.

Play and Playgrounds.

"In the proper working of a school, with a due regard to the principles of physiology, as well as of psychology, — the body, as well as mind, — the children ought not to be kept long together. The reduction of school hours to the proper time for efficient teaching, which is demonstrated to be

half the usual school time, is in itself followed by marked reductions of non-attendances on account of sickness. The children should, moreover, whensoever the weather permits, be turned out frequently into an open space or playground for exercise, and in fine weather for lessons. Much may be said for the Irish hedge-row schools, as against the dens in which English children are frequently kept.

"The common playgrounds for children are either the natural soil, which is very dirty, or a gravel, which is sharp and wasteful in the excessive wear of shoes and clothes; children fall down upon it and seriously bruise or lacerate themselves, and the sharp grit gets into their eyes or their lungs.

"In one large institution, the managers could not be induced to improve the children's playground, which was of gravel, until after the prevalence of ophthalmia, when it was flagged, or paved with York landing. It was then found that a saving of one-half the shoe-leather was produced by the new paving. But the paving with York landing is very expensive. A Val de Travers asphalted paving would be little more than half the expense, and would, with its peculiar elasticity of feel at the surface, serve much better, especially for gymnasiums. A tile paving, with concrete or celenite tiles, would be cheaper still, and these tiles, with the lock joints I have proposed and shall hereafter describe, would have the peculiar advantage of not being disturbed by "hop-scotch," or any other form of play. In Germany, smooth concrete paving is used, with considerable saving of shoe-leather. Where very good smooth paving, of the quality in question, is laid down, I do not

see the necessity of children, or at least those of the poorest class, kept in public institutions, wearing either shoes or stockings in dry summer weather. If the feet be regularly washed and kept clean, I question whether they would not be better bare at such times. In Scotland children travel barefoot to school in all weathers, or carry with them their shoes and stockings which they put on there, dry, in which there is reason.

"A closet for drying clothes should be provided in elementary schools. Captain Johnson, one of the Queen's messengers, has advocated the use of sandals for soldiers, made of matted flax, such as are in use with great advantage by the peasants in the Basque provinces. In those close neighbourhoods in urban districts, where there is absolutely no space for playground to be got, a flat roof should be constructed for the purpose, as is done with excellent effect in one large school near Long Acre.

Cheap Dinners.

"As the efficiency and economy of teaching, by a division of educational labour among trained masters in graded schools, requires the children to be gathered from wider areas than heretofore and from considerable distances, it will often be necessary to make provision of food for them. In the great middle-class school of the City of London, it has been found requisite to provide cheap dinners for those boys who do not bring their food with them in what the Rev. Mr. Rogers, the governor, calls their "nose bags." In the great metropolitan Jews' school, which provides

for 1,700 children of the poorest class of Jews, and which is, in very important respects, a model of educational administration, I found that its leading supporters, the Baron Lionel de Rothschild and the Baroness, of their own munificent educational grants, have been accustomed to bestow on that one school £800 per annum, to provide a portion of bread and some milk, to enable the very destitute and necessitous children to attend.

Light in the School.

"There is yet another very frequent and serious defect in the construction of the common schools, which requires to be guarded against, namely, the bad distribution of light. From a paper transmitted to me by the excellent sanitarian, Dr. Varrentrapp, of Frankfort, it appears that from the insufficiency of light, and from the bad distribution of light, in the schools in Germany, nearly a third of those who remain in them during and beyond the secondary stages, are subjected to short-sightedness. Professor Leibrich, the eminent oculist, tells me that the injury is always done by the front light, and that the light should always be got in from the left side, and that in towns where such light cannot be obtained, it should be got as the next best from the back of the desk, and never from the front. A great deal of distortion and of curved spine is, as Dr. Varrentrapp shows, occasioned by the wrong adjustment of seats, a topic, as well as others of the wall colourings and school fittings, beside my immediate purpose. I consider, that schools ought to have more of window space; of windows made with double or with very thick glass, which is economical as saving heat, and

is, moreover, advantageous, as lessening the transmission of sound from the streets.

Schoolroom Walls and Floors.

"For the reasons which now prevail in respect to the walls of properly constructed hospitals and cottages, the walls of schools should be made of impermeable materials, should be washable, and of a proper colour.

"The evils common to the schools of this country are transplanted to our colonial possessions. In few of these schools, as Miss Nightingale observes, 'is any attempt made at combining the elements of physical education with the school instruction, and even where this is done the measure is partial and inefficient, being confined to a few exercises, or simply to bathing.' The obvious physiological necessity of engrafting civilised habits on uncivilised races with great care, appears to be nowhere recognised, except at New Norcia (Benedictine) School, Western Australia, on the return from which there is the following very important statement. Gymnastics are stated to be necessary to prevent sickness, and the reporter proceeds: 'The idea of bringing savages from their wild state to an advanced civilisation, serves no other purpose than that of murdering them.' The result of the out-door training practised at this school, is said to have been hitherto successful 'in preventing the destructive effects of this error.'

"With the advantage of some practical suggestions by Mr. Canon Cromwell, the Principal of St. Mark's Training College, I once directed a plan of one school, with the primary requirements, to be got out by Mr.

Samuel Sharp, the architect, for 500 children, with the Roman floor warming by hollow tile floors, with solid concrete walls, and with a lavatory, but without a swimming bath and without a playground.

"The tiles forming the hollow floor may be of concrete, or of earthenware, or of slate, tongued or rabbeted at the sides, so as to fit into each other, and, when cemented, not to be easily shifted, or so as to obstruct the passage of highly warmed air or smoke, if accidentally loosened. The upright supports are made with tongues to lock in at the corners of the tiles.

"The tile and the support used as a cross-tie will serve for the construction of walls, and attain more perfectly the sanitary ends I proposed for the hollow brick construction of the walls of houses. It may also be used for roofs as well as walls, in which case iron ties are to be used to give it cohesion, and iron uprights for bearing power, on the Crystal Palace principle. If walls of ordinary construction be made with non-absorbent surfaces, there may be sometimes unpleasant condensation on such surfaces, because they will be occasionally colder than the dew point of the air. If, however, contact of the outer air with the inner part of the wall be prevented by the interposition of a layer of confined air, the inner surface of the wall will never be much colder than the air of the room, and will not, therefore, condense moisture from it. The inner glass of double-paned windows does not become covered with hoarfrost for the same reason; the inner pane being nearly as warm as the inner air, it remains clear when single panes are obscure.

"The tiles, for this purpose, may be made of

earthenware as well as of concrete, but most cheaply of concrete, which requires no burning, and most readily receives exactitude of form. With about one-sixth or seventh of good Portland cement, or with General Scott's new preparation of lime, clay, and sand, called *celenite*, tiles and the supports may be made stronger than the common building stones. For leading the warmed air in any direction, and better diffusing it on admission, in place of the upright pillars, upright tiles with rabbeted joints may be used.

"My friend the late Dr. Emile Braun, the Prussian archæologist at Berne, and Mr. Semper, the professor of architecture of Dresden, the architect of the Dresden theatre, men perhaps as highly versed in the principles of architecture as any in Europe, were of opinion that a tile construction,—if suitable tiles could be manufactured,—would be preferable to the hard burnt hollow brick constructions which I advocated, as means of getting rid of the evil of absorbent and damp walls. I concurred with them in believing that constructions on the principle of *cohesion*,—that is to say, on the principle of the Crystal Palace, only with opaque tiles instead of glass,—would in many cases have great advantages over the common construction, on the principle of *solid masses and weight*.

"The same construction might be carried out for the roof of the house. As against wet, a coating of Val de Travers asphalte, which resists great solar heats, and is uninflammable, would serve excellently, as also over much of other tile surfaces.

"It is estimated that this construction can be made with tiles of Portland cement cheaper than similar constructions with the best solid brickwork with

the usual plastered and papered walls and wooden floors; while it could be made cheaper still by one-third of celenite tiles.

"A basement floor, warmed on the Roman principle, would, at an exceedingly cheap rate, diffuse an equable and pure warmth over the upper rooms, including passages and corridors, the great desideratum in house-warming. The interior wall tiles may be made of various forms, and with any amount of art decoration that taste or luxury may require; and if of tiles, they may be made with porcelain surfaces. The permanence of such surfaces, and of the whole of the tile walls, is a means of large economy to be set against the periodical repaperings and painting, and dilapidations of the common constructions."

CHAPTER XVI.

COMPETITIVE EXAMINATION.

SINCE the year 1827, Mr. Chadwick has been an earnest advocate of the system of promotion by competitive examination. His argument on this subject was enforced amongst friends, such as the late Mr. Ingram Travers, Mr. Morley, Mr. Stuart Mill, and others, for many years before it was condensed into the form of a paper. He met with sturdy opposition from Lord Palmerston, who held by patronage, for promotion, to the last. He was also opposed by many of the friends of education, on the ground that competitive examination, as part of an educational system, is most likely to degenerate into cram and into the art of destroying the mental faculties, so as to unfit them for future work while yet the organ of the mind is in the early stages of development.

The subject, undergoing various revisions of study, was at last brought out in due form by our author in an elaborate article read at the meeting of the Economic Section of the British Association, held in Dublin, in the year 1857. At this meeting he was fortunate enough to receive the support of Archbishop Whately. Thus reinforced, he continued the campaign in favour of the competitive method, and at the Leeds meeting of the association, contributed

a second communication on the same subject. He received now the support of Lord Goderich,—the present Marquis of Ripon. But his best advocacy of competitive examination was brought forth in a third paper communicated to the British Association, this time at the Cambridge meeting in 1862. Here the whole argument was expounded in a form which may be epitomised in a few pages.

Each point as to the requirement of a public servant was put forward in the most simple and yet the most telling method. We must prepare a public servant as we would prepare him if we required him for private service. That was the preliminary argument, and that supplied, other arguments are discussed: what may be excluded safely, what must be retained.

First he took up history. A man ought, it was said, to know the history of his own country. Yes, but not in such a way as to make a range of the events and characters of some thousand years of the past and too much of the bad, the subject of competition, at the expense of proficiency in one or other of the sciences, the purer and the better.

History, as a topic, is one great field of cram, of reliance on memory, and of development; so history may be omitted. Then there were the literatures of different countries. Ought not a gentleman to be versed in polite literature? Certainly; but it is not needful that it should be the subject of competition, at the expense of proficiency in other and indisputably better and more needed subject matters of training.

Literature is another great field of cram and dodging examinations, giving opportunities of trick, yielding chances to the idle who have read for

amusement, over the diligent who have laboured i
the serious business of life. The literatures mig
be left for cultivation to social influences, and to th
own attractions and advantages as recreations.
tests, they were of an inferior order.

These two heads being dismissed as subjects
competition, there remained those which are admitt
as means of mental training and superior tests
aptitudes. First in appointed order were the matl
matics. It was submitted, taking them as a ma
test, whilst the basis of examination was ma
narrowest, it should be made deeper or rather long
and that double the time should be given to it. Tl
would have the advantage of giving the slow but sur
fairer chance against the quick and may be the sup
ficial, and would render the examinations less pai
ful to the nervous. Next, the experimental scienc
were considered. There was an opinion increasing
strength, that greater prominence should be given
the experimental sciences, and that these, for t
scientific corps of the army, should be made the ch
topic for competition, and, of course, for preparato
education. The grounds of this opinion were, th
mental exercises in the supplemental sciences i
cluded exercises of the faculties in induction as w
as in deduction; that eminence in the pure math
matics had not been, in this country or in Franc
accompanied by equal eminence in the public servic
that the experimental scientist was not practical, a
that if it were put to a chief of engineers, or to
mechanical or eminent civil engineer in this countr
which two competitors he would choose as an assi
tant, the one who was eminent in mathematics,
the one who was eminent in experimental science

the latter would from experience be the one chosen. In support of this argument he expressed a strong preference for the experimental sciences, deduced from the failure of the French engineers, who were pre-eminent in pure mathematics, and from the failure of pure mathematics at home.

Throughout his address he carried out the same firm and discriminating policy. The object was to abolish all the artificial or, as he called it, "cram," and, without insulting any man's prejudices, to institute in place of the artificial the actual; to make the State study how to collect servants who used their hands, as well as their heads, and who knew only how to use their heads in directing their hands.

Another address on the effect of open competition of the junior appointments to the public service, read before the National Association for the Promotion of Social Science in 1871, sums up so tersely and effectively the views of the author on the competitive system, that I place it, with slight abridgment, as the concluding part of the present chapter:—

"A number of distinguished men, outside as well as inside the public service, have concurred in the active promotion of this great reform. Of the 'outsiders,' were the eminent leaders of the City Administrative Reform Association, the late lamented Mr. Ingram Travers, Mr. Peter Gassiot, and Mr. Samuel Morley. It has been the intention of those two gentlemen, and of other promoters of the change, to invite to a dinner, as is our wont in celebration of that event, Mr. Gladstone, Lord de Grey, who first obtained a majority in the House of Commons in affirmation of the principle of open

competition for the first appointments to office; Mr. Monsell, who promoted its application to the army scientific corps; Mr. Lowe, who has forcibly advocated it; and we ought also to add, the Earl of Derby, who, when at the India Office, gave the first example of a really open competition for a clerkship; and also Sir Charles Trevelyan, Sir Stafford Northcote, and later Mr. Horace Mann, who did great service to the cause as 'insiders.'

"But having achieved the adoption of the principle that every man in the country is equal in the eye of the law, and that of whatever creed, party, or social condition, he shall have a fair field without favour according to his capacity for the public service, we have now to consider the shortcomings in the application of that principle, and the advance that may be made in it by removing defects and by supplementary improvements.

"I stay to aver in respect to the two great branches of service to which the principle was first applied, the Indian Civil Service and the scientific corps of the army, the Royal Engineers and the Artillery, that sufficient experiences have falsified the predictions of the adversaries of the principle and have justified the reasonable expectations of its promoters. Of old both branches presented examples of the brightest ornaments to the service of the country. But it is undeniable that competition has raised the average of service; it has insured a more hard-working and steady average of officers, a more frugal and more moral average, a higher social average with fewer snobs With important and valuable exceptions of a few men from the ranks, the social condition of the average, instead of being lowered,

has remained much the same, and rather advanced. Members of the aristocracy enter into competition, and, with the advantages of special culture, maintain their own. The Horse Guards bemoaned in respect to the army the prospect of having the service filled with mere feeble "bookworms." Earl Grey lamented this, which, he would have it, was an inevitable consequence of the scheme. Now the fact is, that the average not only exceeds the former average in mental acquirements, but, what I confess I was not prepared to expect, it turns out a better average of bodily acquirement. The Woolwich Cadets, who have a higher order of mental acquirement than those of Sandhurst, beat the latter in athletic exercises, and also beat their senior non-competitive rivals. The average of bodily attainment, with much more yet to do, has decidedly improved.

"It is proper to state that the common methods of competition are often attended with evils, consequent on over-mental work, which require correction. In the preparation for the annual rush or mental Derby day, young competitors often delay preparation until the last, when they work night as well as day, and are so exhausted that it requires some time after the competition to recover themselves for real work, and some do not recover at all, but fall back, and are not seen again, in the fore. This has been long observed to happen with first-class University prizemen.

"One important corrective of injurious excess is the system of '*répétiteurs*' as in use in the scientific schools of France, who examine each day's work, and assign marks for it, which go to an account, that is summed up at the end of the year, and determines

the position. Colonel Rifaud, the head of the Polytechnic School of Paris, told me that he had had experience of both methods, of our method and of that by the examination of the daily work, and that there could be no doubt of the superiority of the latter in making the work more steady and even, and checking the evils of excess in the rush for one final examination. I expect that, by this latter method, the competitors are kept more closely together, and that there are not such wide distances between the heads and tails of batches, or such inequalities of qualifications, as from one to three, as are commonly observable in our competitions. I am informed that in Prussia they obtain a good outcome and approach to the competitive principle by frequent and strict examinations and probations.

"Another check to injurious mental excess is by giving marks for physical exercises. Properly regulated physical exercises are more conducive to mental work, as well as to the duration of mental working ability, than men of the cloister are aware of. They have moreover a moralising influence, as shown by the effect of the volunteer movement upon young men of sedentary occupations, and in the emptying of wine houses and saloons, occasioned by the movement. At the Universities, and at some of our public schools just now, the bodily exercises may be carried to excess, at the expense of the due mental exercises. But that is by default of proper adjustment in accordance with the laws of psychology as well as physiology, both of which are flagrantly violated in our common school-courses, primary, secondary, and superior. It is true that on admission *to* some of our public schools a medical certificate

of a sound physical constitution is required. But that does not satisfy sanitary principle. What is wanted is continued, well regulated, physical exercise every day, to counterbalance every day's mental labour and sedentary constraint. To some of the educational institutions gymnasia are attached; but the answer given to inquiries why they are so little used is, that they 'do not pay,' that is to say, they do not 'pay,' in marks.

"At the instance of General Sir Linton Simmons, the commandant of the Royal Military Academy of Woolwich, marks are now given there for physical attainments. I submit that we ought to urge that arrangements should be made for physical exercises, and that marks ought to be given for proficiency in them, in order that they may be regulated, and duly adjusted to the mental exercises. Such adjustment is especially required in the competitions for the Indian Civil Service, for which physical training and stamina are most needed, where a man who has only a good seat at the desk is sometimes beaten in work by one who has also a good seat in the saddle.

"With important reforms in the methods, I believe it will be found that large reforms are needed in the subject matter of examination.

"Men of the cloister have conceived that if they could keep a boy or man nailed on a bench, as it were, before them, in an attitude of attention, they might go on and on all day long pouring in instruction, all of which would be received and retained. One old founder prescribed ten hours of strict daily desk work for young boys. But our recent practice of examination would show them that there are

limits to the capacity of receptivity, which cannot be transgressed without injury, and which are much narrower than they conceived. The effective working time of prize men at the University is proved to be under six hours of daily desk work. Our eminent psychologist, Professor Bain, states that at the Aberdeen University they have the hardest heads, and the hardest workers of any in the kingdom, and that four hours of daily head work is as much as is good for them. And yet such is the prevalent deplorable scholastic ignorance of psychology as well as of physiology, that six hours of daily sedentary brain work is commonly required in elementary education from little children.

"The limitation of the capacity of receptivity creates a competition of subjects to be excluded. Increasing demands of professional qualifications for remunerative work are pressing for the occupation of these restricted limits of the capacity of the recipient. The needs of the useful and the productive are pressing to the extrusion of the ornamental and the unserviceable. The pupils of the Roman Catholic seminaries in Holland, where long hours are occupied in Church formularies, are found to go to the wall in competitions for the public service with Protestants, whose time has been more occupied with things mundane. The Roman Catholics, therefore, are bitter against the competitive system, which has got root, with declared excellent results to the public service.

"Increasing practice shows that it is better that the subject matters of competition should be few and narrow, that they may be deep and thorough as a discipline,—rather than wide and diverse, and therefore, of necessity, shallow. Thus, if six topics

of qualification be required for a service, it is better that four should be determined by pass examinations, and that the competition should be confined, if not to one, to two, of the most essential and the most trying. There is an increasing pressure for the necessity of living science, as also for the living languages, to the exclusion of the dead. Under existing conditions, then, competitions must be ruled by the demands of service in the field or the office, rather than by the traditions and mediæval conceptions of the cloister. The pretensions of the English Universities in behalf of the dead languages as a discipline, and the curriculum founded upon them, are disputed in themselves and challenged upon the evidence of their average outcome.

"Grim, perhaps the greatest of modern philologists, maintains that as a disciplinary instrument German is better than either Greek or Latin, and English better than German. Those who would see some of the grounds on which the pretensions of the classicists are challenged, may read an excellent pamphlet recently published at Aberdeen, on "The Claims of Classical Studies, whether as Information or as Training," by a Scotch Graduate. As president of the Economic Section, at the meeting of the British Association at Cambridge, I had to assert the claims of the vernacular, and to remind a gowned audience that they sent to the Commission of Enquiry a translation of the Latin Statutes into bad English. The claims of the vernacular and of science, of the living language over the dead, were conceded by the meeting there. But if you would judge by the outcome of the classical studies, for which so much is claimed, take the testimony of

members of Parliament, of each other, as writers or thinkers, by asking how many there are who can be recommended for the examination of an important subject for eliciting testimony, and expressing the results in logical resolutions, or expounding them, in good English, in a well-ordered report or State paper? What amount of actual creditable examples of such workmanship can be adduced? As a matter of experience in minor positions, managers of banks will tell you, that as a rule men from the English Universities with much Latin and Greek, are beaten as clerks by men from the Scotch Universities and schools with less Latin and Greek, but with more arithmetic, and more thrift for social position and advancement. To what, moreover, has the vast progress of this country during the last half century been due but to science, and its practical applications in steam and mechanical power;—to the steam engine, to railways, to steam navigation, to telegraphy, to mining, to textile and other arts displayed in the international exhibitions, and to engineering? And to which of those great improvements have the classicists or the men of the English Universities contributed?

"The course of the examinations has been very much led by the curriculum of the examination for the Indian Civil Service which was chiefly prepared by Lord Macaulay, and which bears his own impress upon it rather as a litterateur than as an administrator. If the necessities of the Indian Civil Service had been duly consulted, I am assured that the course of examination would have been widely different in important respects. As undue authority *has*, I think, been given to him on the subject, it

appears to me to be proper to observe that he was himself an example of the results of the species of culture to which he gave prominence at the expense of practical science—of legislative and administrative science, as well as of physical science. I am an admirer of him as one of the greatest of our writers. But as Secretary of War, he was placed in an administration which required to be thoroughly reformed, and while there he failed to bring about this result.

"On such grounds I am prepared to submit that the competitions for the public service should be framed in strict reference to the service, to what is paid for, to the exclusion of the merely ornamental; that the curriculum of education should be made to conform to the service; and, that the service should in no wise be sacrificed to the existing mediæval conceptions and practice of the older unreformed schools.

"It will follow, then, that the living language must have precedence over the dead in the examinations, and living and practical science over past or present literature.

"The mastery of the English language, and its use as an instrument, including, as it ought to include, the great subject of logic, is difficult enough of itself, as Dr. Dasent, one of the Civil Service Commissioners, shows in his evidence before the Commissioners on middle-class examination, and may well occupy the time that can be given to it. But as a subject for examination, the literatures are great fields of cram, which ought to be entirely excluded. The first commission of military education agreed with me in confining the examination to the languages alone, and excluding the literatures. It is asked whether a youth ought not to be

acquainted with the literature of his country, to which the answer is, that if he is made master of the language of his country, you give him the best means and inducement to acquire that literature as a relaxation, and that there is no time, neither is there any necessity, to impose the acquisition of it upon him as a labour. In respect to classical literatures, the fine models of composition, the poetry, what father of a family would read much of them outright to his children, and why should he be led to send his son to familiarise himself in a cloister with a species of literature which, were it brought out anew in the vernacular and sold in Holywell Street, would be undoubtedly prosecuted by the Society for the Suppression of Vice? Why should he wish to imbue his son's mind with a theology which Mr. Gladstone acknowledges to be bestial and degrading, and to do so at the expense of science which is practically needed, which is free from pruriency and from savage passion, and is elevating to the mind?

"Competitions for the public and other service ought, I contend, to be confined to what is required, and what alone is paid for commonly, the qualifications of skill in the use of instruments, the instruments of language or of science; for in acquiring these perfectly there will commonly be enough to do. What is wanted of the corresponding clerk (or secretary) is that he should write English clearly and correctly. What head of a public department, or private employer, goes beyond that to ask whether a clerk is well up in Macaulay, Byron, Shakespeare, or other author? If the service be for French correspondence, what is wanted is that he shall

understand and write the French language clearly and well; not whether he is a master in Molière, or Racine, or Voltaire. And so with all the other topics required for the practical daily work of life.

"I submit that the introduction of histories as subjects for competition is unjustifiable, as occupying time mischievously to the exclusion of paying practical science. I go into an elementary school, and hear boys examined, to show that they have been got well up in the genealogy of the Plantagenets, whereby it is proved to me that time has been wasted to the possible exclusion of the acquisition of a chapter of economic science, or of useful knowledge on the subject of the generation of wages and profits,—principles important to their own and to the public welfare. Besides, much of the popular history is objectionable for its maleficent influence, as well as for its falsehood. I remember that the impression produced in my boyhood by our popular English History was very much to the effect that Frenchmen's throats were made for Englishmen to cut. It is very likely that the popular history of France raises a similar impression towards Englishmen. I was led to regard our Edward III. as a glorious and, on the whole, estimable warrior, but recent revelations show that he was in reality a rascally repudiator, who ruined an Italian banker and a city by the repudiation of the debt for money borrowed to carry on the war in France, in which he gained his victories. What are the revelations of the foundations of history even in our own time, such as that made from the private correspondence of the First Napoleon by Lanfrey, in contrast with the heroic story of Thiers' Consulate and the Empire? But if

history were perfect truth and purity, it is nevertheless peculiarly objectionable as a subject of examination, as a field of cram of names and dates, and of exercises of memory at the expense of better things. I submit that we may claim to have our public competitions preserved from pre-occupation with the falsehoods, the passions, and perplexities of the past, and the bad; and to have the valuable and restricted time reserved for the necessities of the present, for passionless and international science, and for outlooks for the future and the better.

"I regret that the new regulations of the Civil Service Commissioners appear to be in serious contravention of these practical principles. The regulations for the competitions for clerkships give marks as follows:—

	Marks.
English Language and Literature	500
English Language and Literature and History of Greece ...	750
" " " " " " " Rome ...	750
" " " " " " " France ...	375
" " " " " " " Germany ...	375
" " " " " " " Italy ...	375

"Now it will, I conceive, follow from what has been said that the public ought to claim to have this course purged of the great fields of cram—the histories, and the literatures, and in respect to the languages, if the Greek and Latin are retained (be it observed for clerkships) that the positions of the living languages ought to be reversed.

"It may be said that the selection of any of these heads for competition is optional. But the objection is to the undue position given to them authoritatively, on which I cannot but believe that the eminent Commissioners, to whom the public are in many respects highly indebted, have been led to sacrifice

their own convictions to the influence of the public schools, and to the heads of the English Universities. But that is anyhow a sacrifice of the interests of the service to old scholastic systems, in which there is an increasing demand amongst the younger members of those same institutions to have large reforms. The provision of such a scholastic system, it may be contended, is as fallacious as a true social security as it is as an intellectual security, a fact shown by reference to the outcome of Christ Church, and other examples presented in our bankruptcy and police courts, and other public offices.

"If the plea be for the classics for the intellectual culture of clerks, that object may be directly obtained by the culture of the 'moral sciences,' that is, logic, mental and moral philosophy. I should contend for a larger position and amount for logic alone;—less the scholastic logic than the logic which leads to a clear perception of the relations and orderly arrangements of business affairs.

"To conclude—a great reform, needed in primary elementary education, is to direct it sedulously to the needs of productive service, and I consider that the like reform is needed in our secondary and in our superior education. If the Civil Service competitions are based, as they ought to be, on the general requirements of the best civil administration, they will conduce to the highest improvement of the general education of the country."

CHAPTER XVII.

PENSIONS TO SCHOOL TEACHERS.

AMONGST the various efforts made by our author for the benefit of those who are engaged in education there is one relating to aged school teachers, which calls for sympathy as well as for reasonable appreciation. I refer to an attempt in which he tried to establish an educational fund from which pensions for aged teachers could be drawn. At the time when Earl de Grey and Ripon was President and the Right Hon. W. E. Forster was Vice-President of Council, a deputation was organised to wait upon them, of which deputation Mr. Chadwick took the lead. The memorialists submitted that the establishment by government of a fund out of which retiring pensions or annuities could be granted to teachers, after a certain length of service, would not only be a great boon to teachers as a body, but would be conducive to the improvement of education generally. They thought, also, that such a fund might be maintained by a small percentage, deducted from all grants to schools and training colleges. They further submitted that, except in special cases, no annuity should be granted to any teacher who had not taught twenty years in an elementary school under government inspection. Lastly, they suggested that the

amount of the annuity should depend upon length of service, but that a service of thirty years should entitle a teacher to the maximum annuity granted.

The prayer of this petition was supported by Mr. Chadwick in a short address, of which only the following abstract was preserved:—

"It is impossible to overlook the fact that the petition was opposed to a policy which has recently been adopted in the Department of ignoring all official connection with the school-teacher, all concern as to his status, and of leaving him entirely to the care of irresponsible and changing school-managers. But it is a duty to submit that, to the continuance of that or the like policy, there stands a disastrous experience, attested by school inspectors, of the widespread desertion of the most valuable skilled elementary teachers, and reductions of the numbers of pupil teachers,—ruinous to the training colleges; a reduction of the quality of the supply of service; and, injury to the quality of the teaching of the children of the wage-classes of the country. Any one who has studied educational administration, who has visited schools, observed various modes of teaching, and traced the outcome of schools, will have noticed that, although the subject-matters of instruction are much alike, there is often the greatest difference of result, and will be deeply impressed with the aphorism, that 'as is the teacher, so is the school.' Such a one would be anxiously concerned at the reckless ignorance of a policy of discouragement, and would feel the need of an opposite policy of encouragement, in order to obtain the best manner of men practicable for raising the lowest of the

population. Looking at the qualities desirable and necessary in teachers, and knowing the prices obtainable for those same qualities in the open labour-market, it will be perceived that, at the very best, educational administration is put to a serious disadvantage in obtaining fitting teachers. But security of position and freedom from worry during good behaviour are cheap means of obtaining good service at a lower price than it would otherwise be obtained for the public. Many men give up private service, and the conflict of the open labour-market, and take the public positions at one-third less of salary, for the sake of the comparative independence of the public status, and that, too, without any dereliction of the principle of complete responsibility to a competent and impartial authority.

"The speaker proposed this principle as applied to Poor Law administration, in so far as it has been adopted to the independence of position during good behaviour, and, leaving the question of retiring pensions, which will eventually have to be conceded, insisted that the plan has produced a large number of officers well qualified to undertake, with advantage to the public, the chief responsibility for executive action. Entire dependence on changing school-managers, commonly unlearned in teaching, and often incompetent, and mostly irresponsible, is to many minds a very repulsive condition. School teachers may take a position under school managers, where there will often be zeal, though it be without skill or competency to deal with the subject. But much of the lukewarmness and some opposition to the Scotch Parochial Schools Bill is due to uncertainty,—such as that which prevails here amongst

schoolmasters,—as to their position under it, and to a repugnance to the vestral element in the local boards, the members of which may be destitute of zeal, as well as of skill or competency to judge of service. Some opposition to the proposal of school rates arises from the feeling that under such local authority as the provision for rating may bring, the teachers may be even worse off than they now are. Securities may, however, be provided to relieve them from that ground of apprehension. The measure now proposed by the memorialists would cost nothing to the Government but its superintendence. The acceptance of the measure would be a return to a policy of justice and security, and an encouragement to competent school teachers, so necessary for the advancement of elementary education."

It will be remembered by those who can recall this address that the effect it produced at the time when it was delivered was one of real thankfulness on the part of those who were most concerned—the teachers themselves. The teachers did not desire to claim any pension until after twenty years of service in one or more elementary schools, and were prepared to sacrifice the slight deduction that might be made from their salaries during their time of service if the full period of twenty years should not be completed, with other proposals of a very moderate and salutary kind. These I must leave as apart from this work; but I thought it well to give the above address for the purpose of showing the soundness of an experienced teacher on the question of pension for public service in education, and the reasons for it on the ground of educational economy.

CHAPTER XVIII.

SUMMARIES OF EDUCATIONAL EFFORTS.

IN order to condense this section of the task that is before me, I propose in the present short chapter to put together from the author's own words a few summaries, gleaned from the extended field of reading I have traversed, and which have a significance that ought not to be overlooked.

Of Primary Education.

"It is a great mistake to speak of 'primary education' in its widest generality as if it were all of a sort, and all successful. Of the accepted lower-class elementary education a large proportion is unsuccessful. Even denominational and religious education, under trained masters, as in many of the poor-law unions, is often unsuccessful; for the children are often ill-trained, and few of them get into habits of self-supporting industry.

"One great cause of these educational failures appeared, under the Poor Law Inquiry Commission, to be, that the knowledge of many of the school managers and teachers was very much bounded by the four walls of the school, and that they paid little

attention to the future necessities of the pupils, or to what service they were to be put after leaving the school. The first step for amendment appeared to be, to bring the school into good relationship towards the service in after-life for which the pupils were destined."

Fitness for Different Services.

"Inquiry into the fitness of children for different walks of life ought to extend much further in regard to children of the artizan and middle class than to those of the wealthier. It ought to be systematised into an inquiry with a view to secure that the training in each school should be most eligible for increasing its efficiency and practical success.

"Under a sound educational organisation a supervisor or, as he might be called, a rector, should visit regularly every school and learn the special aptitudes of the scholars for particular services. Such supervisor or rector could then give an opinion in respect to any scholar and his fitness for any particular duty or calling for which he may be required. In this way the best scholars would be secured for the proper places, and the success of the training in its influence over the nation would be complete."

Large Schools Best Schools.

"Large schools have great advantages if in them variety of teaching is introduced. A genius for mechanics or for drawing is lost where neither are taught. The teaching in large classes in the secondary schools might appear to be productive of a level

uniformity of results; but it does not. Practically it evolves varieties of capacities, often to the surprise of the teachers. These varieties of aptitudes would be brought forward and applied under the arrangement proposed.

The Schoolmasters and Employers of Labour.

"The head master or school-manager should put himself in relation with the chief employers of labour, of secondary or superior as well as of primary labour, whether manufacturing or commercial. He should ascertain their wants, and, where the demand was sufficiently numerous to form classes, take steps to provides them, and to obtain special art, science, or technical instruction, as it might be. For scholars destined to agriculture he would provide appropriate lessons, as well as for those destined for the arts and manufactures.

"He should regularly visit the places to which boys from the school have been sent, and inquire from employers how they answer expectations; and upon ascertaining defects of the outcome, should take steps to have them remedied, in relation to secondary as well as primary school teaching and training."

Outcomes of Endowed Schools.

"Inquiries at counting-houses as to the outcome of large endowed schools, as well as to the results of competitive examinations, are demonstrative of the worse than waste of time in those schools, from ignorance or indifference as to the actual needs for the service in after-life which ought to be provided

for in them. Supercilious objections are made to such a course, that the object of education is to do something more than to fit the pupils for the office or the shop. But for whatever else they may be fitted, they must be fitted for these if they are not to be fitted for the insolvent court, or for family paupers in long-life vicious and painful dependence as 'ne'er-do-weels.'

Selections according to Aptitudes.

"A clergyman, the son of a peer, stated to Dr. Temple, when head-master of Rugby, his intention to send his son in for a competitive examination for the Royal Engineers; on which Dr. Temple advised that the youth should be sent elsewhere for a special scientific training. Such is the advice needed by parents of higher as well as of lower condition.

"Being informed that a large machine-maker at Rochdale, who employed some four hundred workmen, had discontinued employing any other than 'half-timers,' inquiry was made of him by a member of the Council and also by a clergyman, as to the particular grounds of the employer's preference of the half-timers. He replied that he found their general aptitudes so decidedly superior, that 'if each of you gentlemen were to bring me a son of yours with a premium (presuming that they were the same as the sons of gentlemen of your class), I would not take them, and would take half-timers for nothing in preference; for I well know the difficulty there is in dealing with young men of your class. It is almost necessary to stand over them and guide their pens for them.'

Outcomes of Highest Class Schools.

"Frequent accounts are received of the inaptitudes engendered or left by the teaching in superior schools, from the heads of manufactures who require science and art in their processes; and so also from the heads of large commercial establishments. Both complain that, from great classical schools, which have their annual recitals and displays of eminent scholarship, the scholars come to the counting-house with arithmetic that is worthless; that they must re-teach themselves if they would get on; that, although they may have been taught modern languages, they have been so ill-taught that they cannot write correctly a foreign letter; and that, though they may know good Latin, there are few of them who write good English. Hence they are frequently beaten by the boy whose education has been in an infant or in a large national primary school. This unfairness as towards the middle classes will be only prevented, at all events as to the greater proportion of them, by a common start, in large primary and secondary schools, kept in close relation with the demands of art and science, the manufactory, or the counting-house, by constant communication with them from the school.*

* The above selections are condensed from a report to the Society of Arts in 1870, on educational organisation. In later papers to the same society, notably in 1879 and in 1883, other equally telling lessons are supplied, of which a few are also added, to the present chapter.

Infant School Teaching.

"By good educational organisations the required improvements in the quality of trained teaching power may be generally attained, not only without any increase, but even with a reduction of the total common annual expenses, while given amounts of elementary attainments may be imparted, of a superior quality, to three at an expense now commonly incurred for one. It follows, however, that whilst exertions should be made to extend the existing means of art, and science, and technical instruction, by institutions, by evening schools, and by colleges, for all who may now be ready for them, the great legislative and administrative policy of the country is to concentrate attention on the improvement and the extension of an improved elementary education, and to the shortening of years as well as hours of the day for the elementary training of the population of this country. To this end, exertion is required to be directed to the improvement and the general extension of infant school teaching, by which, as it is now proved, an advanced preparation may be made, so that from one year and a half to two years of valuable elementary school-time may be saved.

Earning and Learning Hand in Hand.

"Having regard to the hard necessities of common life, and the economical condition and welfare of the many, one great object for saving school-time as early as practicable, is to let earning and learning

go on, as much as possible, together. The great practical object of school teaching is not to make superior scholars, but superior artizans; not to impart to the middle classes the accomplishments of the leisure classes, but applied science and productive art for actual service. It is desirable, for the progress of arts, manufactures, and commerce, to make the school itself primarily a manufactory, and a labour mart for available service.

Brain Work and Hand Work.

"The half school-time principle, and all reductions of school-time, is conducive to this end. It is now proved that the capacity of the beneficial attention and mental labour of children is exhausted in the good primary schools in less than three hours of good sustained teaching, and that all labour beyond that is detrimental or pernicious. The combination of book instruction with physical exercise, or with actual productive avocations, is proved to be advantageous to both, and this is true of middle-class or superior as well as inferior teaching.

Compulsory Education.

"In respect to the question of compulsory education, it may be observed that the shortening of school-time practicable for teaching reading, writing, and arithmetic from six years to three, will render unnecessary a great part, if not the whole, of the compulsory action now sought for to retain the children of the wage-classes in the school to their thirteenth year. The children of the wage-classes who do

not now attend school, will have their voluntary attendance greatly conciliated by the reduction of the daily hours of teaching—on the half-time principle—from six hours' daily attendance to three, a change which, to a great extent, would enable domestic service and earning and learning to go on together. Such compulsion as may be necessary, in relation to the children of the wage-classes, may be best applied by an extension of the principle of the Factory Acts.

Degrees of School Teaching.

"Experience confirms the great old Hebrew aphorism, 'that he who fails to teach his child a trade, teaches him to become a thief.' Good expenditure, under this experience, may be set down as a means of economising two millions annually of expenditure for penal administration and ineffective repression. Finally, it is to be observed that the question of compulsory school teaching must be assumed to have relation to *good* school teaching. Of the present school teaching in England, it has been stated by a distinguished Government inspector, the Reverend Mr. Fraser, that about one-third of it is tolerably good;—that is to say, in the common accepted term of the goodness of the schools which impart the "three R's" in about six years instead of three, and that are destitute of physical training; that about one-third of it is indifferent; and another third of it utterly valueless.

Religious Teaching.

"In respect to instruction in religion, the only desire must be that it may be improved beyond that now given. Merely for industrial purposes, what is needed is the substitution of habitual liars, cheats, and drunkards, requiring perpetual, painful, and expensive supervision, by a commandment-keeping, truthful, sober, law-abiding, contract-performing, conscientious, trustworthy class, thoroughly imbued with practical Christianity, for which the clergymen of all denominations ought to be made really responsible. The system of the Faversham School Union, approved by the late Archbishop Sumner, is an admitted proof of how the anticipations of the late Dr. Chalmers may be realised,—how religious differences may be set aside, and education be placed on the basis of a common Christianity. Since 1857 this system has been in vogue in Holland and works excellently."

CHAPTER XIX.

IDEAL PROJECTS TOWARDS SOCIAL UNITIES.

WE have seen in the preceding chapters of this part of our work that its learned author has earnestly advocated the half-time principle of physical education and mental training; the application of the principle of competitive examination for the abolition of political patronage in first appointments for the public service; and various details for the protection of the young during the school life, with provisions for those who have made education a professional calling. Before I bring this part and this volume to a close, I devote a final chapter to a brief survey of certain other allied topics which are administrative and social in their bearing, and have at various times been laid before the public in numerous addresses, reviews, and specially published memoirs.

The space at my disposal enables me only to present these remarkable contributions in the briefest possible abstract. They are essentially projects, more or less elaborated, and as they have not yet come into universal operation, but are, as it were, designed for work of a future day, they admit of being put in this condensed form, as ideals tabled for after scholars to refer to at greater length, when they have become acts of time.

In another instance, the author found an idle prentice in a workshop who instead of working uld read a book, and every now and then attract the ention of his fellows by his irrepressible laughter. Come, Tom," said one of the men, "you must l us what you are laughing at. Read it to us." e idle apprentice read from "Pickwick," and n the laughter became epidemic, with such an provement in the rapidity of the work that the ster appointed idle Tom to be reader in general, h the best success. Mr. Chadwick told this fact Dickens, assigning to Tom, the reader, the func- n, economically, of a fifer or drummer to animate, ulate, and quicken the march of production. And, moral he draws generally is, that if all work were plemented in this way, the monotony of artizan would soon undergo a revolutionary change ich more quickly than anything else would be ventive of revolutionary disturbances.

An Economical Analysis.

Mr. Chadwick once tried to get out an economical alysis in analogy to a chemical analysis. He tried experiment on an economical analysis of a four- nd loaf of bread :—How much was the labour of duction or wages; how much the farmer's profit; w much the rent; how much the cost of transit? The task he found to be a very difficult one. He ertained that whilst the rent in the loaf was ee farthings, the cost of the retail distribution s three halfpence—*i.e.*, more than double the rent. ese proportions generalised gave as a result that en the rental of the land was forty-five millions in gland, the cost of the distribution of the products

of the land averaged ninety millions—the cost of the retail distribution being more than 25 per cent.

During the cotton famine the Messrs. Birley determined to feed some thousands of their workmen with bread. It was found that the cost of the production of the four-pound loaf of the best wheaten bread was fourpence. At that time the price of a loaf at the ready-money shops was sixpence-halfpenny, while at the retail credit shops it was sevenpence-halfpenny, with an inferiority of flour and loss of weight, making not less than double the cost of the product supplied by Messrs. Birley.

He extended this analysis on the production of bread in small quantities to wholesale production, and inferred that 11 per cent. could be saved by the wholesale method compared with the home baking. He extended his observations further to the production of animal food and to the chief articles of consumption in order to determine to what extent combination might be directed to reduce expenditure. The results led him to an appreciation of the co-operative system, long before it came into operation, and to the idea that some sixty millions of expenditure might be annually saved to the population of the United Kingdom by that system, and with work better done.

On Unity in Social Organisations.

We have already seen that the earliest studies of Mr. Chadwick were directed to life assurance and the various organisations of clubs and friendly societies among the working classes. He also devoted a great deal of time to the study of the principles or organisation and administration of the

medical charities of France, and on the administration of relief to the destitute poor of England.

These researches led him to the projective idea of applying the principle of unity of action to everything that is administrative in the State. He suggested this first in regard to the Poor Law, insisting that the administration of the Poor Law should be entrusted to one central authority for general superintendence, and the details to paid officers acting under strict superintendence and responsibility.

The principles of unity thus formularised for one service he would extend to all the services; to military organisations, to police, and to all educational public endeavours.

This said principle of unity he has recently proposed for application in the government of the country at large, on the principle of codification for national unity, following throughout the master principle of organisation laid down by Bentham, *always to do the same thing in the same way, choosing the best, and invariably calling the same thing by the same name.*

The projective ideas in this part of our author's labours are condensed by himself in his recent work on "Unity," in the following terms:—

"The conditions of a proper centralisation, on the fundamental principles of unity, of the forthcoming administrative area, are yet but little known or understood or attended to in high political quarters, and I beg to state them, as I prepared them for the then new central authority for Poor Law administration. They are these: 'That it is an authority properly constituted, as a responsible agency for the

of the land averaged ninety millions—the cost of the retail distribution being more than 25 per cent.

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During the cotton famine the Messrs. Birley determined to feed some thousands of their workmen with bread. It was found that the cost of the production of the four-pound loaf of the best wheaten bread was fourpence. At that time the price of a loaf at the ready-money shops was sixpence-halfpenny, while at the retail credit shops it was sevenpence-halfpenny, with an inferiority of flour and loss of weight, making not less than double the cost of the product supplied by Messrs. Birley.

He extended this analysis on the production of bread in small quantities to wholesale production, and inferred that 11 per cent. could be saved by the wholesale method compared with the home baking. He extended his observations further to the production of animal food and to the chief articles of consumption in order to determine to what extent combination might be directed to reduce expenditure. The results led him to an appreciation of the co-operative system, long before it came into operation, and to the idea that some sixty millions of expenditure might be annually saved to the population of the United Kingdom by that system, and with work better done.

On Unity in Social Organisations.

We have already seen that the earliest studies of Mr. Chadwick were directed to life assurance and the various organisations of clubs and friendly societies among the working classes. He also devoted a great deal of time to the study of the principles or organisation and administration of the

medical charities of France, and on the administration of relief to the destitute poor of England.

These researches led him to the projective idea of applying the principle of unity of action to everything that is administrative in the State. He suggested this first in regard to the Poor Law, insisting that the administration of the Poor Law should be entrusted to one central authority for general superintendence, and the details to paid officers acting under strict superintendence and responsibility.

The principles of unity thus formularised for one service he would extend to all the services; to military organisations, to police, and to all educational public endeavours.

This said principle of unity he has recently proposed for application in the government of the country at large, on the principle of codification for national unity, following throughout the master principle of organisation laid down by Bentham, *always to do the same thing in the same way, choosing the best, and invariably calling the same thing by the same name.*

The projective ideas in this part of our author's labours are condensed by himself in his recent work on "Unity," in the following terms:—

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Religious Teaching.

"In respect to instruction in religion, the only desire must be that it may be improved beyond that now given. Merely for industrial purposes, what is needed is the substitution of habitual liars, cheats, and drunkards, requiring perpetual, painful, and expensive supervision, by a commandment-keeping, truthful, sober, law-abiding, contract-performing, conscientious, trustworthy class, thoroughly imbued with practical Christianity, for which the clergymen of all denominations ought to be made really responsible. The system of the Faversham School Union, approved by the late Archbishop Sumner, is an admitted proof of how the anticipations of the late Dr. Chalmers may be realised,—how religious differences may be set aside, and education be placed on the basis of a common Christianity. Since 1857 this system has been in vogue in Holland and works excellently."

CHAPTER XIX.

IDEAL PROJECTS TOWARDS SOCIAL UNITIES.

WE have seen in the preceding chapters of this part of our work that its learned author has earnestly advocated the half-time principle of physical education and mental training; the application of the principle of competitive examination for the abolition of political patronage in first appointments for the public service; and various details for the protection of the young during the school life, with provisions for those who have made education a professional calling. Before I bring this part and this volume to a close, I devote a final chapter to a brief survey of certain other allied topics which are administrative and social in their bearing, and have at various times been laid before the public in numerous addresses, reviews, and specially published memoirs.

The space at my disposal enables me only to present these remarkable contributions in the briefest possible abstract. They are essentially projects, more or less elaborated, and as they have not yet come into universal operation, but are, as it were, designed for work of a future day, they admit of being put in this condensed form, as ideals tabled for after scholars to refer to at greater length, when they have become acts of time.

The Policy of Pleasurable Existence.

It was a doctrine of the older political economists, beginning with Adam Smith, that the progress of manufactories and the sub-division of labour connected with them must lead to monotony of life amongst the workers, and be detrimental to intellectual development. This belief remained current, almost without challenge, until it was disputed by Mr. Chadwick, who, after examining the matter very carefully, controverted it and maintained the opposite doctrine.

His argument, based on psychological considerations, is that after a time the mechanical work performed by the artisan becomes automatic, and that the higher faculties of the mind are left entirely free and unimpaired. If under these circumstances the mind be left uncultivated and unoccupied, it may truly, according to the Adam Smith school, be given up to monotony. But this is merely from the encouragement of a bad system. Provide the artizan with food for reflection, and his mind will soon become good company for itself. This has been proved in the case of many artizans, as in theological shoemakers, ploughman poets, and shepherd mathematicians; and it would soon become general if early and proper education led up to the results. An engraver whom our author knew, who did work for the illustration of annuals for booksellers, found variety even in this seemingly special occupation. To one employer he went in for clouds alone; to another for trees; to a third for water; to a fourth for figures. This man soon found an increase in the quantity of work he could execute with improvement in its quality.

In another instance, the author found an idle apprentice in a workshop who instead of working would read a book, and every now and then attract the attention of his fellows by his irrepressible laughter. "Come, Tom," said one of the men, "you must tell us what you are laughing at. Read it to us." The idle apprentice read from "Pickwick," and soon the laughter became epidemic, with such an improvement in the rapidity of the work that the master appointed idle Tom to be reader in general, with the best success. Mr. Chadwick told this fact to Dickens, assigning to Tom, the reader, the function, economically, of a fifer or drummer to animate, regulate, and quicken the march of production. And, the moral he draws generally is, that if all work were supplemented in this way, the monotony of artizan life would soon undergo a revolutionary change which more quickly than anything else would be preventive of revolutionary disturbances.

An Economical Analysis.

Mr. Chadwick once tried to get out an economical analysis in analogy to a chemical analysis. He tried the experiment on an economical analysis of a four-pound loaf of bread:—How much was the labour of production or wages; how much the farmer's profit; how much the rent; how much the cost of transit?

The task he found to be a very difficult one. He ascertained that whilst the rent in the loaf was three farthings, the cost of the retail distribution was three halfpence—*i.e.*, more than double the rent. These proportions generalised gave as a result that when the rental of the land was forty-five millions in England, the cost of the distribution of the products

of the land averaged ninety millions—the cost of the retail distribution being more than 25 per cent.

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removal of those evils in the repression of which the public at large have an interest, but for which the people of the locality are helpless or incompetent.

"As an authority of appeal in disputes between conflicting local interests.

"As a security for the correct distribution of local charges, and for the protection of minorities and absentees against wasteful works and undue charges.

"As an agency for collecting and communicating to each local authority for its guidance the principles which may be deduced from the experience of all other places from which information may be obtained. This is a service which ought to be well provided for and sedulously enforced.

"Democratic government is always denounced by a certain class of politicians as especially bad. I might show that, under the present conditions of disunity, with multiplied, unnecessary appointments of officers, with ill-assorted functions, bureaucracy, in the dislogistic sense, is at its worst, and that the best remedial course would be found in unity, when united to the functions I have recited, and when, under a central authority, charged with effective responsibilities for their application, they are not allowed to relapse, as some have been, under the old lethal official maxim for sanitation, 'Never to act until you are obliged, and then to do as little as you can,' *i.e.*, for the prevention of human misery and waste.

"I may cite, in support of my views on the evils of disunity in local administrative organisation, a clear and important display of them by Mr. Wheeler, civil engineer, of Boston, given in a paper in the October number of the Royal Agricultural Society's *Journal*,

treating on river conservancy and the cause and prevention of floods. He shows the need of local unity, with competent central aid, for the protection of agriculture from immense loss, and, I will add, for the allowance of great gain from subsoil land drainage, by the provision of proper outfalls and the direction and application of surplus water from them.

"The means of working out the results specified, of getting the local administration under complete unity, and getting future legislation under unity by one chamber, would be by a division of labour amongst separate commissions,—as by a commission for the assimilation of the administration of the laws for the protection of the public health; by a commission for the assimilation of the law and administration for the relief of destitution; by a commission for the assimilation of the penal law and the administration of constabulary and police forces; by a commission for the assimilation of the laws and administration of the law and the better application of rates for the maintenance of the roads and the means of transit; by a commission for the assimilation of the laws and the assimilation of the civil procedure for the administration of justice, as far as may be, throughout the empire. The result of examinations by competent commissioners would not fail to be a great advance in economy of the increasing amount of fifty millions of local taxes, now burthensome in great part from the unskilfulness and inefficiency of administration.

"It is now held forth as a primary object to sustain self-government (*i.e.*, the government which, as a rule, is the most expensive and the least effective), that it should be rendered interesting and attractive,

and interesting to persons in the locality to take part in it. As far as relates to the administration of the Poor Laws, much of this has been done by centralisation; by the introduction of method and order where there was chaos; and much more may be done by advancing to the condition of the Irish system, by which the proportion of painful and repulsive cases to be dealt with are greatly reduced. For education in public service, the most systematised administration will indisputably be the best. But, for the general object there are large social conditions to be considered; for, whilst the improvement of local administration renders the service required more serious and arduous, the demand upon the time of persons of all conditions becomes more oppressive and absorbing, so that it is becoming more difficult to find competent persons to undertake continued serious unpaid service. Added to these conditions are the increasing attractions of scientific pursuits and of commercial directorates to persons of leisure, which make it a rule that the few who have time to spare are those whose attention is often of least value. The increasing difficulty of getting persons to serve on common juries, and the interruptions occasioned thereby, threaten that institution in England. Hence, instead of the demands for local unpaid services being extended, it will be found that they ought to be restricted and carefully economised and aided.

"I am fully aware that for the improvement of the local government, especially that for the protection of the poorer population, the central administration will require important amendments.

"In the absence of knowledge, and of correct administration, and of its productiveness, it may be said

that the common course of agitation in this country has been for the shifting of the burthen of the rates from one description of property to another, or from the local to the general taxation of the country. The course proposed of examination and comparison would show that much larger relief is obtainable by the reduction of burthens through an improved and productive administration of them, than by any process of shifting them. The rivalry of different methods by a comparative examination would be fraught with interest and large instruction to the rated taxpayers, to the general public, and to the Legislature. The economies obtainable would manifestly be so large, as to render it an improvidence, and an economy of the oil serving to prevent friction, noise, and agitation, not to make it to the interest of office-holders, under existing practices, to assist in the furtherance of the changes required, by giving them promotion, when they can be retained, on a liberal retiring allowance in case of their displacement under new arrangements.

"In regard to the effect on the superior Legislature of the attainment of unity, by doing everywhere the same thing in the same way, as closely as may be, choosing the best, I would point to the example of the power gained to France by the uniformity of law and procedure achieved by the Code Napoleon. By that Code, or more especially by the Civil Code, an influence of attachment was gained to France, which, if there had been no disruption of war, would have gone far to have retained the voluntary connection of conquered populations, particularly that of Belgium, where the Code is still retained substantially, as it is largely in Italy and other States on the Continent.

But we may advance beyond the example of this near continental experience to the practical working of our own Code for India. That Indian Code was mainly wrought out on the lines of Bentham, worked out by his ardent disciple Cameron. The most experienced Indian administrators speak of it, so far as it has been carried, as a vast success, in producing order where there was chaos, and in giving a strong binding force of unity to the administration of that great part of the British Empire.

"Sound codification may be submitted as of increasing necessity for binding together our colonies, and for clearing away from the older colonies the great mass of different systems of law prevalent amongst them—old Dutch law, old French law, and new French law, or the law of the earlier and of the later French Codes. The late Sir William Martin, the Chief Justice of New Zealand, explained to me how unworkable he found the home procedure of the English courts, and the absolute necessity he was under of framing a new procedure suitable to the colony. It was interesting to find how closely he approximated, independently, to the procedure elaborated by Bentham for home use. I submit that the colonial experiences of the law officers may be best consulted for getting out a Code for common use, which I anticipate would, in its simple elements, serve also the best for home use. It may be anticipated that the common interest would conciliate to aid such a work.

"Sir Henry Thring, our able Government draughtsman, in his article in the *Quarterly Review* for January, 1874, on the simplification of the law by codification, suggests that the first practical step is

to establish a 'department of the Government charged with the duty of putting in shape the existing law and superintending current legislation.' I imagine that he will have had experience of the difficulty of getting Parliament to submit to any superintendence of current legislation. Sir Robert Peel expressed his experience of its difficulty when, speaking of Lord Romilly's Encumbered Estates Act for Ireland, he said, 'it was so good a measure that he really wondered how it had got passed.' In the present disunited condition of legislative procedure, it may be stated that, as a rule, no measure partaking of scientific principle is ever passed that does not come out worse than it went in. Of this the measures for the application of sanitary science, and those for the application of administrative science to the Poor Laws, may be presented as examples. Concurring in the suggestion of the appointment of a department, I would submit that it should be with the attribution of competent commissioners to make local inquiries and collect evidence as to experiences, especially from lay people, and to obtain consents to the conclusions thereon. I apprehend that they might bring from the colonies, as well as from the provinces, experiences with an amount of support that would not be given to any other work. The expense for an abundantly well-appointed commission would be a means to a vast economy of money. Our cousins of the United States have adopted our common law, and are largely governed by the decision of our judges in Westminster Hall, and often by the statutes of Queen Victoria as in affirmation of it. We might return the compliment, and probably find and invite the contribution of their

experiences for it, especially for a Code of commerce and of civil procedure.

"I am aware that the work of administrative unification, on the principles which I have tried to enunciate, as deduced from experience, cannot be expected to be done, so to say, 'to-morrow:' but I have felt that the plan of it ought to be stated 'to-day' for consideration in connection with the great questions arising on local administration.

Projected Government for Ireland.

Applying his views on unity of administration to the case of Ireland, Mr. Chadwick has recently proposed certain alternative measures for the government of that country, of the local administration of which he has a very high opinion.

I select from his paper "On Alternative Remedies for Ireland," the following extracts rendered in his own words:—

"I have a confident belief that it will be found on examination, that Ireland has really, with inferior materials for unpaid service, the best chief branches of local administration, aided by central service in the empire; *i.e.* the best poor law administration, the best road administration, and, after all deductions, essentially the best police administration. If the principle of these branches were to be extended and made general throughout the empire there would be a great gain of administrative force, with a large reduction of the burden of local rates. The principles for the administration of the relief to the destitute *in* Ireland were those which we proposed as more

specially applicable to the institution of the central control for the administration of the Poor Law in England. It will appear to be of importance for Ireland that this central service should be distant, unimpassioned, as well as strong.

"No measure partaking of science ever goes into Parliament under existing conditions that does not, as a rule, come out worse than it went in.

"A three-chambered Legislature must be, so to speak, a narrow-minded Legislature, producing only narrow-minded local legislation. The member of the English section or chamber says to himself, 'that measure,' if it be not a party measure, is 'only Irish,' or 'only Scotch,' and does not care about it; the Irish member says that it is 'only English,' or 'only Scotch,' and does not heed it; and the Scotch member returns the compliment on both. The first Public Health Act was regarded as 'only an English measure' by the Scotch members who, no doubt, otherwise would have prevented by a large majority the great mischief that was done by a small number at a morning sitting. The Scotch Poor Law measure was regarded as 'only a Scotch measure' by the Irish members, who could have contributed experiences from Ireland that might have preserved Scotland from the great amount of evil clearly caused there by deviation from sound economical principle in the relief of destitution. When members are led to vote upon a neutral measure, they do so usually under influence and not upon conviction. A general measure, founded upon the experience of the whole administrative area, and prepared by the best administrative service, would set aside narrow provincial views, and obtain votes

upon the perception of the widest experiences, worthy of a single-chambered Legislature. Until this is obtained, the action of the Legislature must continue to be halting, dilatory, expensive, and vexatious, tending to produce legislative and administrative disintegration. When unity is obtained by doing the same thing in the same way everywhere, choosing the best, one event for Ireland may be expected to follow, namely:—the abolition of the Lord-Lieutenancy, an abolition of which the late Lord Fortescue, after his experience as Lord-Lieutenant, declared to be most desirable. Sir Alfred Power, one of my colleagues as an Assistant Commissioner on the Poor Law of England, and lately Vice-President of the Local Government Board of Ireland, one of the ablest administrators that Ireland has ever had, has written on the evils of the continuance of the Lord-Lieutenancy. If that be continued, if separate administration of the same things be continued, it may be asked why a separate and dilatory system of legislation should be continued?

"Except under extraordinary circumstances, any legislation and administration for Ireland alone—that is to say, for one-seventh of the available area of administration—is always likely to be narrow and behind-hand, and of a merely provincial character, which must be either proportionately inferior, or excessively expensive to be equal in execution. We may wonder what would be the position of agitation from one-seventh of the kingdom against a rule which six-sevenths of the United Kingdom knew, and were well satisfied to be the best for common benefit? I would avoid as much as possible any irritating topics;

but it would be for the Irishman to say whether it would be the best for him, as for the Scotchman, to be the citizen of a small province or of a large empire; to have a wide field for service opened to him by consolidation and competition, or be restricted to a poor and narrow and inferior field."

As remedies for Ireland the author proposes:—

"1st. That of giving to the Irish labourers of the wage classes extended and complete unity, by placing them on the same footing as the English labourers, opening up to them on equal terms the free labour market, and a service market of the United Kingdom and of the empire.

"2nd. That instead of confining the Irish children to the old inferior and ungenial education and habits of a small province of a seventh of the United Kingdom, we should give them the advantage of the most improved elementary education and physical and mental training on the half-time principle, which would best fit them to enter the enlarged labour market of the empire, and to be acceptable socially, for the exercise of political privileges.

"3rd. That we should provide for the people beneficent and productive labour at increased and first-class wages by drainage works for the relief of the occupiers of the most depressed districts.

"4th. That we should provide them with improved means of relief from depression by increased facilities for emigration, or by the consolidation of the occupation of the land in enlarged areas for improved and more economical production, and for a better return in wages.

"5th. That we should provide for a properly regulated sanitary inspection of houses, of places of

work, and of schools for all Ireland as well as for England, where it is as pressingly required for the protection of the masses of the population from extensive preventable disease.

"These several measures on principles the results of much examination and experience may be presented for appreciation as a beneficent policy for the removal of the chief causes of disturbances, and in substitution of the policy of penal repression, the sole policy at present regarded, but which leaves those causes only partly affected."

Cheap Railway Fares for the People.

Mr. Chadwick's family connections with the promoters of the railway movement in Lancashire led him to observe on this subject. From the first he opposed giving up the public means of transit to private companies in the way in which it was originally done, and wrote to his friends and movers of opinion, on the Continent, against it. He preferred the mode adopted in France of putting the roads out for competition to construct and work for a term of years. France got the contracts at first for constructing and working for terms of years, generally under thirty years. These terms were afterwards corruptly extended to ninety years. Had the original principle been adhered to, the French people would now have had their roads free from a large proportion of their charges, and they would have been working more economically under unity. In evidence before a Royal Commission, and in various papers, he showed, by reference to the evidence of experts engaged in connection with the railways, that by unity at least twenty per cent. of the working expenses might be

saved, chiefly by enabling two trucks to do the work of three, two competing lines running from the same place to the same place to do the work of three at the same time and with trains not above one-third full; also by enabling a great deal of transit of goods and minerals to be worked over low levels inexpensively, or at half the price of conducting the transit over high levels. These savings, under unity, would give the shareholders—who, as a rule, have not got half the dividends promised them by the promoters—an increase of dividend of one and a half per cent.; and this although all the directorate might be allowed to retain their emoluments for life. But his doctrine of increase of production with reduced fares did not please the commercial classes, and a deputation of them in opposition to the proposal of a parliamentary train at one penny per fare per mile insisted that such a low fare, which our author urged for, would be their ruin. How far away the commercial practical men were from the truth on this matter the results of the penny a mile traffic have abundantly shown.

He advocated in like manner, similar principles of increase of production with reduced prices, under unity of administration, for supplies of gas and water; and here again his judgment has been sustained by every experiment in which it has been tried.

Model Volunteering for Military Service.

In his Poor Law service, Mr. Chadwick had as associate assistant commissioners, Sir Francis Head and Field-Marshal Sir John Burgoyne, as well as

other officers of engineers. Their talk was often of things military, in which, in regard to matters of administration, he took great part, and out of which he evolved some principles of organisation which were communicated to the public in a speech delivered before the Society of Arts during a debate upon a paper read by the late Sir Henry Cole.

Sir Henry proposed the reduction of the amount of our forces in India, introducing the organisation of Switzerland, where the soldiers are, for the greater part of the year, allowed to follow their ordinary occupations.

Our author supported the reduction on the ground that, after very careful study, he could come to no other conclusion than that prolonged barrack detention injured rather than benefited military discipline. At the same time he would have the training and discipline so arranged that its formative stage should be in the early life of each citizen, by the introduction of military discipline into all primary schools, and by the adaptation of such discipline for civil as well as military qualifications.

He proposed also to give all volunteers double pay, or the pay of the police, for the half-day's exercise on the Saturday afternoon, with special advantage to the *élite* of them—superior shots and moral, God-fearing men—who would enlist, join colours, and go abroad for any service, long or short. One hundred hours of exercise of such an intelligent force would render it fit for any service; and composed of infantry, cavalry, and artillery, it would, after a few weeks, be as potent as Cromwell's Ironsides, and at a third the cost of the present barracked soldier companies.

Volunteers prepared after this fashion would, he contended, be equally great as pioneers for the colonies and for colonisation.

Systematic Repair of Common Roads.

Mr. Chadwick paid early attention to road administration and road construction. By his evidence before a committee of the House of Commons he did much to get an Act passed for removing the administration of roads from the parish to the union; and effected a material reduction of ignorant and corrupt administration; only a temporary expedient but sound in principle.

His later project on this subject, a project which waits still to be carried out, rests on the drainage of roads. He contends that the strength of a road lies in its drainage, and suggests the improvement of every road in the country by laying down alongside of it permeable pipe drains in the place of the common stagnant ditch drains which now exist. These permeable pipe drains, when properly laid, would serve likewise as valuable outfalls for the pipe drainage of the adjacent lands.

In regard to the laying of roads, he ascertained that whilst the wear of a road by the foot of the horse was as one, the wear by the wheel of the carriage was as two. He proposed, therefore, a road construction with a hardened wheel track of asphalte for roads of much traffic, and of highly hardened concrete for roads of lesser traffic and for the horse footway. Three miles of wheel track of asphalte well laid, would be as cheap as one mile of an iron tramway. Such a road would require no toll, because

in the end it would be more economical than the present faulty system.

The footway to a road of this kind would be made of coal tar asphalte granulated, specimens of which footways may be found in good working order near to Nottingham.

With the aid of a special committee of the Society of Arts, our author made an examination of the whole subject of laying out, paving, and cleansing the streets of great centres. In some trials made with the dynanometer in London it was found that on the asphalte roadway the drag required was 69,765; on a wood roadway, 106,880; on good macadamised road, 114,628; and on new macadamised road, 259,800. On the whole it was made clear that the horse power required for the metropolis would, under the suggested scientific improvement, be reduced by one-half; that vehicles of the tricycle species would extensively supersede horse power; while the health of the people would be improved by the absence of dust and the ready way in which the streets would be cleansed of decomposing poisonous animal matter.

The views expressed in the last paragraph on the construction of roads were expounded in another form by our author in evidence which he gave before a select committee of the House of Commons on tramways, on March 22nd, 1877.

In this evidence he explained that granite trams or wheel tracks had been in use in the east end of London, but still more in the north of Italy. These trams, though partly satisfactory, left a better system open for trial in the use of the hardest pieces of asphalte in the place of stone. The asphalte track would be more economical than the iron tram, would

interfere less with the ordinary roadway, and would be free from jolting, as there would be no joints like those in the stone tracks. Such asphalte tracks might be laid down at a cost of about £2,000 per mile.

On the Value of Public Good Wills.

A very original idea has been put forward by Mr. Chadwick on what he calls the value of "public good wills" in dealing with colonies and dependencies, and in their habits of dealing with us instead of with other nations. This idea he supports by the analogy of the private good wills of private traders and professions, who attach a rateable value to their business of so many years of purchase arising from the habit of persons dealing with them. This constitutes a good will in private life which might, fairly, extend to colonial transactions of an international kind.

Another suggestion bearing on this good will question, and, indeed, springing out of it, is that we might fairly reduce all charges incident to a separate and independent military force. In India we practically carry this out. We hold all India with some 80,000 of British and a quarter of a million of native forces. If our dominion were withdrawn and India were left to the natives, she would revert back to former conditions of hostile tribes and denominations, and would be burdened with some three millions of war costs. We hold all Bengal—which has a population of sixty-five millions, the population of all Russia—with ten thousand of British and twenty-five thousand of native forces. If the British were with-

drawn from Bengal the Presidency would be split up under conflicting war costs, and be burdened, as Russia is now, in order to hold together. Sir Bartle Frere, in speaking of these suggestions, said that he had never heard the proposition of "good will business" with our colonies, nor the economy of military protection from the mother country stated before. It was unknown to Bentham when he wrote, "Emancipate your colonies."

Administrative Diaries and Maps.

Mr. Chadwick also introduced some improvements in the executive administration of public moneys. He formed the plan that the Assistant Commissioners should keep diaries, in which were stated on one side the places visited and the service rendered, and on the other side the daily pay and expenses. A tabular collection of these diaries was produced weekly before the Commissioners, who were thus enabled to see, at a glance, the distribution, the local work, and the cost of their divisional forces. He planned maps to show more completely the direction of each force. In the case of epidemic visitations he had the death-rated places marked out, on these maps, with blue dots, in order to make the locality of the epidemic strikingly evident. An example is given in the sanitary report of 1842.

Some of these maps were very instructive. On one indicating the course of the cholera in the metropolis the lines of large stagnant sewers were marked by the clustering of cases around them. But at points where the sewers discharged into the river, the front lines of the contiguous houses displayed an absence

of marks, which proved to be due to the sweep of the tide and of the winds. Since the suggestion, Dr. Jansen, of the Statistical Department of Brussels, applies the principle by the use of coloured pins, which mark on the map the sites of cases of the epidemic type. A map with these marks upon it is placed weekly before the sanitary authority in order to direct their attention to the course of the invading enemy.

At the first General Board of Health in England the dotted maps sent in with the daily returns played an important part. When the dots showed an increase of cases of disease in any locality, force was immediately directed there to meet the evil. When the dots showed a decrease the force was reduced or withdrawn.

Reorganisation of the Civil Service.

We have already seen that our author was an early and very decided supporter of the principle of competitive examination, by an examining board, for primary introduction into the Civil Service. In 1855, in the papers presented to Parliament on the reorganisation of the Civil Service, he added some important details relating to those public servants who had been admitted. He suggested in regard to them that any officer who had proposed an improvement in practice, had given to the improvement a practical shape, and who was otherwise duly qualified, ought to have a fair share in the execution of the new device. "To him who devises," he said, "let the execution be given, by which a powerful stimulus will be supplied for the advance of the service in its due position." In addition to this proposition he

added others having references to vacancies and promotions in the Civil Service, some of which might well be reconsidered at the present hour. The more important run as follow:—

"That on the occurrence of vacancies, no new appointments (staff appointments excepted) shall be made, if it can be shown that upon a division of the salary within the office, or of part of the emoluments attached to the vacant place, the duties of that place can be performed satisfactorily.

"Second, that notifications of vacancies in any one office be made to all the rest where there are lower appointments; and that opportunities of promotion, *cæteris paribus*, be allowed to them.

"Third, that systematised reports and accounts of the service rendered for payments made by individual officers, and collectively by officers, should be required; and that those accounts, as well as the money accounts, should be regularly audited.

"Fourth, that future promotions to the classes of appointments in question, should, as far as practicable, be based on audited accounts of service rendered.

"Fifth, that the application of the proposed measures for the reorganisation of the Civil Service should, where statutory provisions were not absolutely required, be made by Orders in Council with the aid of a Special Committee of the Council."

Employers' Liabilities for Blameless Accidents.

The falling in of a tunnel from the defective construction of the Manchester and Sheffield Railway, in 1846, occasioned a great loss of life among the navvies

employed. The event incited our author to get a committee of the House of Commons appointed to inquire into the cause. Before that committee he contended that all employers of labour should be responsible for emergencies on their works, and even for blameless accidents, as they were, by law, in France. The Committee approved of his conclusions. He afterwards got the Lord Chancellor (Campbell) to bring in a bill for the sanction of this principle, but he could not get it carried to the full extent of charging the capitalist with the costs of blameless accidents, so as to let such costs be charged through the product upon the consumer. He would have charged all losses of life, as in mining and the mercantile marine, upon the capitalists, by which he would have concentrated and fixed responsibility upon those who had the best means and the strongest motives towards prevention of accidents. This would have affected upwards of five thousand deaths annually, chiefly arising from "accidents" in the use of steam and in the mercantile service.

END OF VOLUME I.

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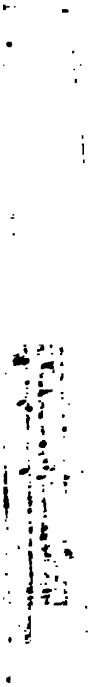

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